

INGLE-BARR INC.



2019 SAFETY MANUAL

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Ingle-Barr Inc.

Safety

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I, David S. Overly, Safety Director for Ingle-Barr Inc. completely endorse and strictly enforce all the policies, rules, and procedures written in this manual. I will review and revise the contents of this manual on a regular basis and will keep it current and up-to-date with all applicable regulations.

01/10/2018

Ingle-Barr Inc.

Safety

INGLE-BARR INC.

EMPLOYEE COMMITMENT TO SAFETY

It is the sincere wish of **Ingle-Barr Inc.** to provide the safest establishment and conditions possible for all our employees. Safety, however, is a joint responsibility of the management and employees and each must do their part to ensure the success of the program. A good safety program does not happen by accident, it happens because we all work together each day to make it happen.

As outlined in the Safety Policy Statement, the prevention of employee injuries is of the utmost importance to management and a key ingredient to the continued success and growth of the company. Each member of the management team urges you to join wholeheartedly in this effort. With your help, the majority of injuries can be prevented. Please read the safety policy guidelines carefully, ask questions if you are not sure of a proper procedure, don't take short cuts or unnecessary chances, be alert to the unexpected and the actions of other employees, report unsafe conditions immediately and lead by example. It may take a little extra time at first to think of the safe way to do a job, but this effort will pay off for everyone in reducing employee accidents and injuries.

The success of the safety program depends on the degree to which each of us fulfills our safety responsibilities. Everyone individually has an impact on the success of the program. The safety program will only be as successful as is our efforts to adhere to the safe policies and guidelines. Remember, we make decisions all the time that affect our individual safety, Please, when making those decisions, choose the safe, right way instead of the easy, most convenient way. Management is committed to this effort. Please join us in this effort and make **Ingle Barr Inc.**, the safest possible place to work.

NEW EMPLOYEE SAFETY TRAINING ORIENTATION SIGN-OFF FORM

It is the policy of **Ingle-Barr Inc.** to ensure that all new employees receive adequate safety training at the time of hire.

No employee will be allowed on the job site until this training has been completed. After the training has been completed each new employee will be required to sign-off on the Employee Safety Training Sign-Off Form.

The following items are to be covered.

Company Safety Policy Statement

Employee Commitment to Safety

Employee Safety Responsibility

General Work Rules

Good Housekeeping

Hazard Communication

Personal Protective Equipment

Reporting Injuries

Reporting Unsafe Conditions

Safe Driving Procedures

Proper Lifting

Ladder Safety

Safe use of Hand & Power Tools

Greenhouse Safety

Bloodborne Pathogens (Accident Injury Clean Up)

Fire Extinguisher Operation

Powered Equipment Safety

Safe use of Gasoline and Flammable Liquids

Emergency Procedures

I, David S. Overly, the designated safety trainer have covered the above areas with _____ on _____ (Date) and am confident that he/she understands each of the above areas and will be able to use the information effectively.

I, _____, have received the training on each of the above areas. I understand that safe work behavior is a condition of employment and that I am required to work safely at all times.

**NEW EMPLOYEE SAFETY SITE SPECIFIC & OSHA REQUIRED TRAINING
SIGN-OFF FORM**

In order to ensure that all employees are receiving the safety training necessary to work safely at Ingle-Barr Inc. and meet OSHA specific safety training as required as necessary requirements, this checklist has been developed. Each item outlined is to be reviewed with each employee. After the training has been completed and the supervisor is convinced the employee adequately comprehends the training, the supervisor is to check-off each item. The supervisor and the employee are to sign the bottom of the form.

The form will be filed in the employee's personnel file.

- Hazardous Chemicals used on site
- Location of Material Safety Data Sheets
- Emergency Telephone Numbers
- Required Personal Protective Equipment
- Lockout/Tagout Procedure
- Field Safety Procedures
- Working around Moving Machinery and Equipment
- Safe Use of Hand & Power Tools
- Electrical Safe Work Procedures
- Safe Use of Ladders
- Proper use of Respirators
- Reporting Emergencies
- Site Specific Safety Concerns

I, David S. Overly, the designated supervisor have covered the above areas with _____ on _____ (Date) and am confident that he/she understands each of the above areas and will be able to use the information effectively.

I, _____, have received the training on each of the above areas. I understand that safe work behavior is a condition of employment and temporary work and that I am required to work safely at all times.

I. INTRODUCTION;

This handbook is the written form of the health and safety program in effect at Ingle-Barr Inc. The management of Ingle-Barr Inc. fully endorses and strictly enforces the policies, rules, and procedures within this handbook. The primary purpose is to raise safety awareness and encourage employee participation in the reduction of risk. This is accomplished by the development and communication of proper health and safety rules, policies, procedures, and responsibilities as defined in this handbook. This handbook will be reviewed at least annually (or as often as required by OSHA) and revised as necessary.

II. RESPONSIBILITIES;

PRESIDENT

-Develop and maintain an effective program of accident prevention for Ingle-Barr Inc.

LABOR MANAGEMENT

-Promote safety awareness among all the employees.

-Make recommendations to the policy that will improve and recognize safety performance.

SAFETY OFFICER

-Develop and recommend health and safety policies and procedures.

-Develop and assist in the initial safety orientation to new employees.

-Evaluate and recommend proper personal protective equipment.

-Assist in conducting timely accident investigations and follow-up, and developing preventive measures.

-Provide management with evaluations of hazardous situations and recommendations for corrective action.

-Maintain technical competence in the health and safety field and management methods.

-Maintain a clear understanding of new health and safety regulations for compliance.

JOB SUPERINTENDENT

-Establish good housekeeping practices.

-Ensure the ability and proper use of personal protective equipment.

-Encourage employee safety suggestions and relating them back to the safety officer.

-Conduct weekly job site safety meetings, to ensure employee understanding of the material of these meetings and its documentation.

-Ensure timely investigation of and reports of accidents.

-Exercise judgment when allowing exceptions to the safety handbook. Document such exceptions for review by management.

-Ensure compliance with safety rules and stopping unsafe behavior.

-Be a safe role model.

EMPLOYEE RESPONSIBILITY

-Follow every known precaution and safety rule to protect yourself and your fellow employees from bodily injury while performing work.

-Report all injuries to your supervisor and get first aid if needed.

-Unsafe equipment/tools and practices will not be used, and must be reported.

-Employees will be provided with whatever personal protective equipment is necessary (except safety shoes). Each employee is responsible for the proper use and care of their personal protective equipment.

-Read and abide by the safety handbook.

-Safety meetings are a part of all employees' jobs.

ENFORCEMENT OF SAFETY RULES

Compliance with company safety rules and procedures is a condition of employment for working with Ingle-Barr Inc.

To ensure the safest work environment possible and to prevent accidents and injuries, action will be taken immediately if violation of the rules is observed. Management personnel at all levels are responsible for the enforcement of the company safety rules.

Any violation of the rules will result in disciplinary action and can lead to dismissal, as detailed below

First violation - verbal warning

Second violation - written warning (copy to your employee file)

Third violation - two days off without pay (written violation to your employee file)

-Any violation may affect your chances for pay increases and promotions

-If a serious violation has been observed where others are placed in potential danger by your actions, you could be terminated immediately.

III. GENERAL SAFETY RULES;

-Follow all the safety rules, policies, and procedures outlined in the book and those developed for specific job sites.

-Report all injuries and accidents and unsafe conditions to your supervisor immediately.

-Learn the safe way to do your job before you start.

-Know where fire extinguisher, telephones and first aid kits are located and how to use them.

-Keep your workplace clean, good housekeeping promotes safe and efficient work. Do not allow trash, scrap, or boards with protruding nails to lie in your work areas. Keep walkways, exits, stairs, and landings clear.

-Personal protective equipment must be worn in accordance with the rules in this handbook.

-Only electricians, technicians, and properly trained personnel are allowed to work in electrical cabinets, control boxes, and panels.

-All electrical equipment must be grounded. Three pronged plugs and receptacles are required on extension and equipment cords.

-Fall protection (safety Harnesses) must be used as outlined in this handbook.

-Do not use defective tools, equipment, or materials. Check all vehicles before use to assure they are in proper operating condition.

-Do not defeat safety interlocks, or bypass or remove any safety device without written authorization by a supervisor.

-Do not use compressed air to remove dust, dirt, etc. from clothing or the body.

-Inspect, before use, all lifting equipment. do not use any lifting equipment if a question exists as to its condition or proper use (cables, ropes, sheaves, shackles, booms, etc.). Worn or frayed items are to be replaced or repaired at once.

-When working overhead, post signs or other warning devices to alert others of the hazards.

-Compressed air hoses should never be pointed at yourself or anyone else.

-Horseplay is prohibited.

-Obey all posted safety regulations.

-Rides are not permitted on mobile equipment that is not specifically equipped for that purpose.

-Never walk or stand under a suspended load.

-Do not wear loose fitting garments, long hair must be contained.

-Keep your work area clean. When completing a job, remove all scrap, spare parts, scaffold, etc.

-Smoke only in designated areas.

IV. TOOLS, EQUIPMENT, AND MATERIALS;

- Check all vehicles and equipment before use to assure that they are in proper operating condition.
- Hand tools such as hammers, punches, picks, chisels should be inspected for faulty handles or mushroomed heads prior to the start of each job and shall be re-inspected at weekly intervals throughout the term of the job.
- Cables, ropes, sheaves, shackles, booms, lifting equipment, etc. shall be checked each day. Worn or frayed items are to be replaced or repaired at once.
- Use safety guards provided. The source of power must be disconnected whenever it is necessary to repair or adjust a piece of electrical equipment. It is not sufficient to merely turn off the operating button of the equipment. Note: only authorized persons are to repair electrical equipment.
- Gasoline may be handled or stored only in approved safety cans. All internal combustion engines must be turned off and cooled before fueling, oiling, cleaning or adjusting. Check oil when refueling, Do not use gasoline for cleaning parts or tools.
- Oxygen and acetylene equipment can be very dangerous. Unless you are qualified and authorized to use the equipment, LEAVE IT ALONE! Cylinders shall be secured upright at all times to keep oil away from oxygen fittings (with caps in place when not in use). Watch out for nearby combustibles and keep bottles shielded or a safe distance from welding or cutting.
- Compressed air hoses should never be pointed at yourself or anyone else. Compressed air must be used for prescribed operations only, with pressures kept as low as possible for doing the job properly.
- Riding-no more than three men/women may ride in the cab of a truck at one time. Seatbelts provided must be worn at all times. Riding material hoists, crane, loads, belts, hooks, or excavation equipment is not permitted.
- Material or equipment being transported by truck must be loaded, cinched, and flagged in a manner consistent with good loading and transporting practice and the truck shall be driven only by authorized employees

**V. PERSONAL PROTECTIVE EQUIPMENT;
EYE PROTECTION**

- Safety glasses shall be worn by all personnel while working with power or hand tools, in the shop or on the job site or whenever there is a risk of injury (except when the risk of injury is greater by wearing the glasses than by not wearing them, such as fogged by steam).
- Face shields and eye protection shall be worn when working around hazardous chemicals, equipment that generate high velocity particles (jackhammers, Hilti gun, and grinder).
- Full-face respirator when excessive exposure to dusts, mists, vapors, and fumes could result in eye injury or illness.
- All eye protection shall meet OSHA and/or ANSI standards.

STEEL TOED SHOES

- Steel toed shoes or boots shall be worn at all times, no excuses except from a physician in writing.
- No soft sole safety shoes will be permitted.
- All foot protection shall meet or exceed OSHA and/or ANSI standards.

HEAD PROTECTION

- Hard hats are required to be worn where there is danger of falling or flying objects exists or there is a possibility of bumping your head on hard surfaces.

EAR PROTECTION

-Hearing protection shall be worn by all personnel operating equipment generating excessive amounts of noise (i.e. table saws, power hands tools, jack hammers, bulldozers).

VI. SUBCONTRACTOR'S NOTIFICATION;

-Ingle-Barr Inc.'s superintendent will inform subcontractor or sub-sub contractor employee to immediately leave the job site for violation of any of the following items without recourse;

- violation of OSHA regulations.
- intoxication, coming to job site or trying to work under the influence or in possession of intoxicating liquors or narcotics.
- fighting or provoking a fight.
- horseplay in any form - scuffling, pranks, wrestling, throwing materials at others.

VII. POWDER ACTUATED TOOLS

-Only trained employees shall be allowed to operate powder actuated tools. All powder actuated tools shall be tested before use and defects discovered shall be corrected. Tools shall not be loaded until immediately before use. Loaded tools shall not be left unattended.

VIII. COMPRESSED GAS AND OXYGEN CYLINDERS

-When compressed gas cylinders are hoisted, they will be secured on a cradle in a truck, sling, board, or pallet. At no time will cylinders be hoisted with choker slings. Regulators will be removed and valve protection caps put in place before cylinders are moved in any fashion or by any means. Whenever cylinders are moved the valve will be in the closed position. Cylinders containing acetylene or oxygen will not be placed in confined spaces. Oxygen cylinders in storage will be separated from fuel gas cylinders or combustible materials (especially oil or grease) by a minimum distance of 20'. Cylinders will not be dropped or roughly handled. Before connecting a regulator to the valve the valve will be opened slowly and closed immediately. This action will be taken in an area where there are no possible sources of ignition, and the worker will stand to one side while taking this action. Safety devices will not be tampered with.

IX. FORK TRUCK OPERATION

-All operators shall be instructed in the proper use of this equipment. Fork trucks are to be used in the movement of equipment and supplies and not used to carry, lift, or transport personnel at any time.

X. AIR TOOLS

-Pneumatic power tools shall be secured to the hose or whip in a positive manner to prevent accidental disconnection.

XI. RIGGING PRACTICES

-Rigging equipment will be inspected before each use and as necessary during its use to ensure that it is safe. When temporary rigging such as wire rope lashing, come-a-longs, chain falls, etc. are used for support during all erection sequences of machines, piping, platforms, walkways and steel members, the rigging shall not be removed until all leveling and alignment is complete and the item is secure. Rigging equipment including shackles and hooks will not be loaded in excess of its manufacturer's recommended safe working load or as specified by federal regulation. Job or shop hooks formed from bolts, rods, rebar, etc. will not be used

XII. SCAFFOLD

-Erections and use - The footings or anchorage's for any scaffold will be sound, rigid, and capable of carrying the maximum load intended without settling or displacement. No unstable objects such as concrete blocks will be used to support scaffold or planks. All scaffold and their components will be capable of supporting, without failure, at least four times the maximum intended load; wire, or synthetic or fiber rope used for scaffold suspension will be capable of supporting at least six times it's rated load. Any parts of a scaffold or it's accessories such as braces, screw legs, or ladders that have been damaged or weakened for any reason will be immediately repaired or replaced. All planking will be scaffold grade or the equivalent, as recognized by the approved grading rules for the species of wood used. It should be free of knots, cracks, or splits. Handrails and toe boards are to be used when scaffold reaches 5' or more. Guardrails are to be 2 x 4 lumber and installed on all open sides and ends of scaffolds.

XIII. WELDING

-Workers shall be instructed by supervision in the safe use of welding equipment. Proper precautions; (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other flammable compounds or heavy dust concentrations create a fire hazard. Arc welding and cutting operations shall be shielded by noncombustible or flameproof shields to protect employees from direct arc rays. When electrode holders are to be left unattended, the electrodes shall be placed or protected so that they cannot make contact with employees or conducting objects. All arc welding and cutting cables shall be completely insulated and be capable of handling the maximum current for the job. Defective cable shall be repaired or replaced.

XIV. LOCKOUT/TAGOUT SAFETY

-The primary purpose of lockout policy is to protect all employees working on equipment or in and around tanks, vessels, and chests. It is intended to eliminate any possibility of the machine or process starting up while work is being performed on that equipment. This policy applies most often to electric motors, but may also include stock, steam, water or chemical lines. The rules set forth in this policy must be followed in order to provide maximum protection. Failure to follow these will result in disciplinary action. It is the responsibility of the electrician to see that the power is off to the equipment on which work is to be done. In addition, the employees working on the equipment must try the point of operation controls to determine that the equipment is de-energized. Only individually keyed locks will be used. The key will remain the possession of the person placing the lock. A master series of locks to be used specifically for lockout may be provided to each craft that requires them. The master keys for the craft will remain the possession of the supervisor. A lock must not be removed by any other than the one who attaches it. When a job is taken over by another employee, the relieving employee must attach his lock to the control device before the first employee's lock is removed. At the end of a work shift or when the job comes to an end the lock is to be removed only by the employee to whom it was issued. Each employee will be held accountable for the prompt removal of his lock.

XV. SPRAY PAINTING

-Prevention of damage to personal property due to overspray warrants one or all of the following fundamental safeguards.

Determine wind direction and speed before conducting spraying operations (a wind sock , contact local weather station, a makeshift ribbon to detect wind movement, or anemometer).

Do not attempt to spray paint if wind velocity and directions are such that the overspray is carried a distance beyond the spraying area to nearby surfaces that could be damaged.

Remove personal property from the vicinity of the spraying operation.

Perform spray painting during off shift (night, weekend) when exposure to personal property is at a minimum or there is no exposure.

-Good sound judgment will dictate the extent to which the above should and would be applied.

XVI. ABRASIVE BLASTING

This procedure provides guidance for the protection of personnel engaged in shot, sand, or other abrasive blasting operations which involve air contaminated with high concentrations of rapidly moving abrasive particles. The following protective equipment will be used or worn by personnel engaged in abrasive blasting operations.

-An air-line respirator of the continuous flow type in a protective hood to cover the head (protective helmet), neck, shoulders, and chest.

-An air purifier and filter for removal of oil, water, and any other organic matter contaminant that might be discharged from the compressor.

-A pressure regulator with an attached gauge if the pressure in the compressor exceeds 25 psi.

-A pressure relief valve if the pressure regulator should fail.

-An air-line hose of not more than 300 feet for each man.

-Hood view ports made of impact-resistant safety glass or plastic covered by a metal screen.

-Gauntlet-type leather gloves.

-Regular leather shoes or laced boots (safety shoes required).

-Clothing made of strong-fibered material to resist flying abrasion, material or damage.

-Adequate protective hearing devices.

XVII. GASES, VAPORS, FUMES, DUSTS, AND MISTS

Ingle-Barr Inc. will protect its employees from exposure to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the “Threshold Limit Values of Airborne Contaminants for 1970” of the American Conference of Governmental Industrial Hygienists, shall be avoided (see Appendix A of 29 CFR 1926.55).

Ingle-Barr Inc. will achieve this protection with administrative or engineering controls whenever feasible.

Whenever such controls are not feasible, protective equipment or other measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed.

XVIII. ILLUMINATION

Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed in Table D-3 of 29CFR 1926.56 while any work is in progress. For areas or operations not covered above, refer to the American National Standard A11.1-1965, R1970, Practice for Industrial Lighting, for recommended values of illumination.

**SITE SPECIFIC
SAFETY STANDARDS**

Although the company safety program addresses the general issues of the safety and health of employees, each construction jobsite may have its own unique characteristics and hazards.

To respond to these hazards, Ingle-Barr Inc. may complete a safety site plan for each jobsite.

A competent person will be designated as the safety official for the site (job superintendent, foreman, or safety director) and should make initial inspection of the site in all areas where employees will be working.

After determining the unique hazards of the specific site, the safety official shall either correct the hazards or report them to the appropriate contractor for correction. The safety official also shall make employees aware of the hazards, and inform them of how they can protect themselves.

A general jobsite inspection checklist (found in this program in the inspection section) will be used to help determine hazards. In addition, the site-specific plan may address any or all of the following issues pertinent to the site may not be a part of the overall company safety program:

- *Unique activities known to be hazardous such as confined space entry, steel erection or demolition, lead, bloodborne pathogens and related training to safely perform these tasks
- *Equipment maintenance program
- *Daily Inspections
- *PPE
- *The nature and timing of each contractor's job -- to avoid interference with and creation of hazards for other companies
- *Lockout/tagout
- *Assignment of safety responsibilities (enforcement, inspections, accident investigation)
- *Emergency response procedures
- *Designated first aid givers
- *Hazard communications
- *Surrounding conditions – environment, power lines, road traffic, pedestrian traffic from surrounding buildings, etc.
- *Material storage areas
- *Access routes

JOBSITE INSPECTIONS

The purpose of the Ingle-Barr Inc. inspection program is to detect hazards in the work environment -- including existing and potential hazards, as well as violation of company safety rules and local, state, and federal laws.

Hazards may include unsafe acts, unsafe conditions or unsafe machinery and tools -- and may be general construction hazards or site specific conditions.

The frequency of the inspections program will depend on the complexity and type of work, equipment and materials, along with site specific hazardous conditions.

The inspection program will include at least daily “walk-throughs” and weekly inspections by the job superintendent, and periodic inspections by the safety director and/or upper management.

All employees designated to conduct inspections will be trained in the procedure.

In addition to detecting hazards, the inspection process will include plans to abate any of the problems that are identified. Action to correct or control the hazard will be taken immediately, once the hazard is determined.

Not all inspections will be documented, copies of the documented reports will be distributed to the jobsite superintendent, company safety officer and other contractors on site. (Daily “walk-throughs” can be documented as part of the superintendent’s job log and maintained with the job files.)

Notes will be taken while conducting the inspection, so nothing is forgotten before the process is finished. The notes will later be transferred to a more formal, complete report.

During inspections, it is important to determine why hazards exist and how to correct them, rather than to place blame on employees.

DAILY WALK-THROUGHS

As part of the superintendent’s day-to-day duties, he or she will be constantly aware of jobsite surroundings and workers’ actions affecting safety.

Each day, while conducting other job responsibilities, the superintendent also will watch for hazardous conditions. This includes observing how people move and perform their tasks, as well as the more obvious hazards -- such as broken tools or blatant rule violations.

The results of the “walk-through” will be documented as a part of the superintendent’s daily job log and will include:

- *Job identification
- *Superintendent’s name
- *Date and time of the “walk-through”
- *Any hazardous conditions recognized
- *Correction or control of the hazard

WEEKLY INSPECTIONS

Weekly inspections will be conducted by the job superintendent and will include the completion of an inspection checklist as documentation.

The checklist will cover the basic information, as well as many construction topics pertinent to the specific job. However, the checklist will only be used as a guide, and not an “end-all” to the inspection process.

The superintendent also will watch for all other hazards and potential unsafe conditions, whether or not they are listed on the checklist. If necessary, additional notes will be added to supplement the checklist.

PERIODIC INSPECTIONS

Because it is important for a “fresh set of eyes” to review a project, periodic inspections will be conducted by the safety officer and/or management personnel. Also, when applicable, the company’s safety consultant and insurance carrier will conduct inspections.

These inspections will be both scheduled and unannounced, with the frequency determined by the individual job.

As with weekly inspection, the periodic inspections will be extremely thorough, and documented with notes and a checklist. The results will be discussed immediately with the job superintendent.

WEEKLY INSPECTION CHECKLIST

COMPANY _____ JOB _____

SUPERINTENDENT _____

PERSON CONDUCTING THE INVESTIGATION _____

DATE _____ TIME _____

This checklist covers general construction conditions, and should not be considered an “end-all” to the inspection. Additional notes are encouraged.

CHECKLIST GUIDE:

“Y” = Yes, the task was accomplished.

“N” = no, the task did not occur, but will be given immediate attention.

(note: “NO” answers usually command comments in the notes section at the end of the checklist.)

“N/A” = Not applicable to the particular jobsite at this time.

JOBSITE INFORMATION

- _____ Were OSHA posters and other applicable posters obviously placed on the jobsite?
- _____ Was the weekly safety meeting held?
- _____ Is the first aid kit stocked and in a conspicuous place?
- _____ Is medical service available at the site?
- _____ Are injury and illness records up-to-date?
- _____ Are emergency phone numbers posted?

CONSTRUCTION HOUSEKEEPING

- _____ Are the working areas generally neat and free of debris?
- _____ Is there ample access to, and use of , trash containers?
- _____ Is the waste disposed of properly?
- _____ Are passageways and walkways clear?
- _____ Is there adequate lighting?
- _____ Is there adequate ventilation?
- _____ Have all protruding nails been removed or bent down?
- _____ Have oil and grease been removed?
- _____ Are sanitary facilities adequate and clean?
- _____ Has the drinking water been tested and approved?
- _____ Is there adequate supply of water?
- _____ Are disposable drinking cups provided?

PERSONAL PROTECTIVE EQUIPMENT

- _____ Are hard hats worn at all times?
- _____ Is proper eye protection being used?
- _____ Is proper hearing protection being used?
- _____ Is proper respiratory protection being used?
- _____ Are proper work shoes and clothing worn?
- _____ Are lanyards used, as necessary?

FIRE PREVENTION

- _____ Have employees been instructed in fire policies?
- _____ Have fire extinguishers been checked?
- _____ Are "NO SMOKING" rules enforced?
- _____ Is the number of the fire department posted in a conspicuous place?
- _____ Are hydrants accessible?
- _____ Is the route for emergency vehicles accessible?

LADDERS

- _____ Were the ladders inspected and found to be in good condition?
- _____ Are the ladders properly maintained and stored?
- _____ Are metal ladders kept away from all electrical exposure?
- _____ Are ladders properly secured from slipping or falling?
- _____ Do the side rails of the ladder extend 36" above the landing?
- _____ Have the ladders been tied off?
- _____ Are rungs or cleats not over 12" on the center?
- _____ Are stepladders fully opened when in use?

SCAFFOLDS

- _____ Are the scaffolds properly erected by trained personnel?
- _____ Are all connections secure?
- _____ Is the scaffold plumb and square, with cross-bracing?
- _____ Are guardrails, midrails and toeboards in place?
- _____ Is the scaffold tied to a structure?
- _____ Are foot sills and mud sills provided?
- _____ Are workers protected from falling objects?
- _____ Has the scaffold equipment been properly maintained, and in good working order?
- _____ Are ropes and cables in good condition?
- _____ Are employees using required personal protective equipment?

HAND & POWER TOOLS

- _____ Is the proper tool being used for the right job?
- _____ Have employees been instructed in the correct use of each tool?
- _____ Are tools properly maintained and stored?
- _____ Are tools inspected for defects?
- _____ Are damaged tools repaired or replaced promptly?
- _____ Do power tools have proper grounding?
- _____ Are all mechanical safeguards in use for power tools?

HEAVY EQUIPMENT

- _____ Is equipment regularly inspected and maintained?
- _____ Is there adequate lubrication of moving parts?
- _____ Do all lights, brakes and warning signals work?

ELECTRICAL WORK

- _____ Are tools grounded?
- _____ Is there adequate, well insulated wiring?
- _____ Are fire hazards checked, and are fire extinguishers provided?
- _____ Are electrical dangers posted?
- _____ Are terminal boxes equipped with required covers and are covers used?

HANDLING AND STORAGE OF MATERIAL

- _____ Are materials stored neatly and properly?
- _____ Are passageways clear?
- _____ Are stacks steady, and not too high?
- _____ Are employees lifting loads correctly?
- _____ Are materials protected from adverse weather conditions?
- _____ Is traffic flow maintained and controlled?

HOISTS, CRANES AND DERRICKS

- _____ Does the superintendent perform a daily visual inspection?
- _____ Is a more complex inspection performed on a regular basis?
- _____ Are power lines inactivated, removed or at a distance far enough away?
- _____ Are signal used when needed?

FLAMMABLE GASES AND LIQUIDS

- _____ Are all containers clearly identified?
- _____ Are proper storage practices observed?
- _____ Are all fire hazards checked?
- _____ Are there adequate fire extinguishers nearby?
- _____ Are carts used for moving cylinders?

NOTES

Drug Free Workplace Policy

I. Statement of Policy

In order to establish and maintain a work environment that is safe for all and conducive to attaining high work standards, Ingle-Barr Inc. has established a substance abuse policy for all of its employees. IBI is genuinely concerned about the adverse effects substance use has on its employees and the company's well being. Individuals who engage in substance abuse endanger all employees, not just themselves. Ingle-Barr will not tolerate substance abuse by its employees or sub-contractors.

Drugs

The use, possession, transfers, sale or purchase of any drug or illegal or controlled substance on or off company property or jobsites by employees is prohibited (other than possession of over-the-counter drugs and prescription medications for which the employee has a valid prescription, and the effect of which shall not constitute a detrimental impairment). In addition, employees are prohibited from using or being impaired by any drug or substance of whatever type or legality that interferes with the person's ability to perform the job in a safe manner. Employees taking prescription medication must first inform their supervisor of any medication, when they are to take it, what affects it may cause and when they stop taking the medication. You are not required to disclose the medication or medical condition you have, just that you are medication and its effect on you, documented by your physician. The employer or supervisor shall determine safety of use and maintain a written record of such finding. Possession of paraphernalia used in connection with any drug or substance subject to this rule shall be a violation of this rule. Searches of company or employee property to ascertain compliance with this rule may be conducted at any time.

Alcohol

The use, possession, or transportation of alcoholic beverages during working hours (including regular, overtime, and emergency calls) on company property, in company vehicles, or on jobsites by employees is prohibited. The transportation of unopened alcoholic beverage may be permitted under certain circumstances and only with permission. In addition, no employee shall report to work impaired by alcohol beverages, including on-call employees. Impairment for the purposes of this policy shall be defined as a BAC (blood alcohol content) of 0.08% or higher. Searches of company or employee property to ascertain a violation of this rule may be conducted at any time.

Ingle-Barr Inc. will enact and enforce our Drug-Free Workplace Program, which defines guidelines for all employees' behavior that will and will not be permitted. IBI will not tolerate any violation of this policy. IBI will hold all employees reasonably responsible for supporting this policy.

This document describes Ingle-Barr Inc.'s Drug-Free Workplace Policy. Every employee will read and understand the contents. This policy applies to every employee from the president to temporary/seasonal help, and also applies to contractors and subcontractors we may use. The consequences stated in this policy will apply to anyone who violates the Policy.

Ingle-Barr Inc. holds all employees accountable in terms of substance use but also supports getting help for employees wanting it. Employees who come forward voluntarily to identify that they have a substance problem will receive company help and assistance. However, if an employee has a substance problem and does not come forward, and the employee then tests positive for drug or alcohol use in violation of this policy, IBI reserves the right to terminate employment for violation of this work rule. Employees whose jobs are subject to any special law or regulation may face additional requirements in terms of substance use. Other consequences that apply to all employees who violate this policy are spelled out within this document.

Ingle-Barr Inc. Safety

This Drug-Free Workplace Program became effective on October 1, 2003. Our policy covers five key parts of IBI's program. The five key parts are:

- a written policy that clearly spells out the program rules and how everyone benefits.
- annual substance abuse awareness education for all employees.
- training for supervisors regarding their responsibilities
- drug and alcohol testing, the most effective way to change harmful behaviors related to substance abuse.
- employee assistance.

All employees will be educated about how substance use is a problem affecting the workplace. You will learn the signs and symptoms, dangers of use, and how and where to get help for yourselves and your families. David S. Overly will be our Drug-Free Coordinator. Contact him for information or help. He will be responsible for arranging drug and alcohol testing, as needed, and will have a list of places that employees can turn to for help. He will also be responsible for educating all employees and supervisors about this policy and substance use.

Employee Protection

Ingle-Barr Inc, has designed this policy to protect employees from the dangerous practices of the substance users. Some the ways protection is being offered:

- Employee records like testing results and referrals for help will be kept confidential. Information will be on a need-to-know basis. Any violation of confidentiality rights is subject to disciplinary action up to and including termination of employment.
- IBI is committed to its employees seeking help for substance use. Each situation will be reviewed individually. Employee assistance is available for employees and their families, a list of resources is available from the Drug-Free Coordinator. We want you to come forward if you have a substance problem. If you wait and are tested positive, you risk termination. Nobody wants that.
- All supervisors will be trained in their duties related to testing before the program begins.
- All employees will receive awareness education every year to help identify problems and learn where to get help.
- Collection of urine specimens and breath testing will be done at Adena Occupational Health Center in Chillicothe and Riverside Methodist Hospital in Columbus. A laboratory certified by the federal government will analyze urine and drug test specimens. These labs are 100% accurate in detecting the substances IBI is concerned about are present in sufficient quantity to cause harmful behavior and unsafe conditions for the user and other employees. When necessary a Medical Review Officer (trained physician) will be contacted to determine if there is a valid reason for the presence of the substance in the person's system.
- The testing program consists of an initial screening test. If the initial results are positive, then the specimen is tested a second time. Cut-off levels for each drug and for alcohol are established for what will be considered a positive test. These test will show that the employee didn't just have a little of the substance in his/her system but enough to affect the workplace safety and their ability to do the job. These cut-off levels come from federal guidelines and are fair for all employees.

Employee Awareness Education

Every employee will attend a session in which this policy will be discussed. You will have a chance to ask questions. We'll give everyone a copy of our written policy, and everyone will be expected to sign that they received it. Later, we'll have a qualified person explain why and how substance use in a workplace problem, the effects, signs/symptoms of use, effects of commonly used drugs in the workplace, and how to get help. There will be a minimum of two hours of substance education annually for all employees. New employees will hear about the program during orientation and receive substance education as soon as possible thereafter.

Supervisor Training

Supervisors will be trained to recognize substance problems that may endanger the employee and others as well as violate this policy. This training is in addition to the employee education session. Supervisors will be trained about testing responsibilities, how to recognize behaviors that demonstrate and alcohol/drug problem and how to make referrals for help.

Drug and Alcohol Testing

Testing will be used to detect problems, get employees to refrain from using substances in a way violates this policy, and forces IBI to take disciplinary action against the employee. In addition to alcohol, some of the other drugs IBI will be testing for are:

- Amphetamines (speed, uppers)
- Benzodiazepines (muscle relaxer, depressants)
- Cocaine (including crack)
- Marijuana
- 6-Acetylmorphine Screen (heroin, morphine)
- Barbiturates
- Methadone (used to treat heroin addiction)
- Ecstasy screen
- Opiates ((Demerol and oxycodone Percodan)
- Propoxyphene (narcotic pain relievers)
- Phencyclidine (PCP, "angel dust)

Ingle-Barr Inc. will pay the cost for all initial testing. If the employee requests a retest, that cost will be his/hers to bear.

Employee Assistance

Ingle-Barr Inc. believes in offering assistance to employees who want assistance with a substance use problem. IBI does not have a rehabilitation program and cannot afford to pay for someone to attend a program, but we are supportive of employees taking action on their own behalf to address a substance problem. Ingle-Barr Inc. has collected of list of area resources to give to employees who come forward voluntarily to seek help. The list includes places to go for assessment and for treatment. When an employee has a substance problem, we'll meet with the employee to discuss the problem and any violation of this policy. Ingle-Barr Inc. reserves the right to terminate based on a positive test.

II. When Will A Test Occur?

Employees will be tested for the presence of drugs in the urine and/or alcohol on the breath under any and/or all of the conditions outlined below:

A. Post-Offer Drug Testing

As part of Ingle-Barr Inc.'s employment procedures, all applicants will be required to undergo a post-offer drug test conducted by Adena Occupational Health Center. Any offer of employment is dependent upon satisfactory completion of this screening.

B. Reasonable Suspicion Testing

Reasonable suspicion testing will occur when management has reason to suspect that an employee may be in violation of this policy. The suspicion will be documented prior to the test and the release of the results. A reasonable suspicion test may occur based upon the following:

1. Observed behavior, such as direct observation of drug/alcohol use or possession and/or physical symptoms of drug and/or alcohol use.
2. A pattern of abnormal conduct or erratic behavior.
3. Arrest or conviction for a drug-related offense, or identification of an employee as the focus of a criminal investigation into illegal drug possession, use, or trafficking. The employee is responsible for notification of Ingle-Barr Inc., within five working days, of any drug related conviction.
4. Information provided either by reliable and credible sources or independently corroborated regarding and employee's substance use.
5. Newly discovered evidence that the employee has tampered with a previous drug or alcohol test.

Any employee suspected of substance abuse by the above criteria will not be allowed to return to work until a negative test result has been confirmed. In addition, this employee will not receive wages for the time he is off work.

Reasonable suspicion testing does not require certainty, but mere "hunches" are not sufficient to justify testing. To prevent this, all managers/supervisors will be trained to recognize drug and alcohol-related signs and symptoms. Testing may be for drugs or alcohol or both.

C. Post-Accident Testing

Post-accident testing will be conducted whenever an accident occurs, regardless of whether there's an injury. We consider an accident an unplanned, unexplained or unintended event that occurs on our property, our jobsites, during working hours, or which involves IBI's vehicles or equipment, or vehicles that are used to conduct company business, or is within the scope of employment, and which results in the following:

1. A fatality or anyone involved in the accident.
2. Bodily injury to the employee and/or another person that requires off-site medical attention (beyond what is considered first aid) away from the work place.
3. Vehicular damage in apparent excess of \$500
4. Non-vehicular damage in apparent excess \$500.

When such an accident results in one of the situations below, any employee who may have contributed to the accident will be tested for drugs or alcohol use or both.

Drug and/or Alcohol testing after an Accident

Urine specimen collection (for drugs) or breath/saliva (for alcohol) is to occur as quickly as possible after a need to test has been determined. At no time will a urine specimen be collected after 32 hours from the time of an employment-related incident. Breath or saliva alcohol testing will be performed as quickly as possible but no later than eight hours after the incident, or it will be documented but not performed. If the employee responsible for an employment-related accident is injured, it is a condition of employment that the employee grants the company the right to request that the attending medical personnel obtain appropriate specimens (breath, urine and/or blood) for the purpose of conducting alcohol and/or drug testing. Further, all employees grant the company access to any and all other medical information that may be relevant in conducting a complete and thorough investigation of the work-related accident including a full medical report from the examining physician(s) or other health care providers. A signed consent to testing form is considered a condition of employment. Management reserves the right to determine who may have caused or contributed to a work-related accident and may choose not to test after minor accidents if there is no violation of a safety or work rule, minor damage and/or injuries and no reasonable suspicion. No employee medical records will be requested unless pertinent to the investigation.

D. Follow up Testing after Return-to-Duty from Assessment or Treatment

This test occurs when an employee who has previously tested positive and a decision is made to not terminate the employee under the "last-chance" agreement. A negative return-to-duty test is required before the employee will be allowed to return to work. If the employee fails this test, this will lead to termination of employment. Once an employee passes the drug and/or alcohol test and returns to work, management may choose to do additional unannounced tests for as long as we deem necessary. Any employee with a second positive test result will be terminated. follow-up tests will be unannounced and may occur at any time for a time period that management considers reasonable. The intent is to deter any subsequent usage that would result in a violation of our Policy and result in termination of employment.

III. SUBSTANCES TO BE TESTED FOR AND METHODS OF TESTING

The procedure we are relying on is called systems presence testing. This is how qualified testing professionals identify the presence of one or more of prohibited controlled substances or alcohol that may be present in the employee. There is an initial screening test. If it's negative, then a negative test is declared. If the initial test is positive (comes in at or higher than the cut-off level), a second test called a "confirmatory" test is done. This is a different test and is considered 100% accurate by experts and in court. Cut-off levels are standards that have been established for each of the tested drugs after years of research. These levels will be used to interpret all drug screens/tests, whether for a pre-employment examination, reasonable suspicion test, post-accident test or follow-up test.

Breath alcohol will be conducted by a medical clinic that uses only certified equipment and personnel. Breath alcohol concentrations exceeding .08 will be considered a verified positive result. In the event of an accident where an employee has "whole blood" alcohol drawn at a medical treatment facility, a result equal to or greater than .08 shall be considered to be a verified positive result. An Evidentiary Breath Test (EBT) will typically to be used to confirm any initial positive test result. Ingle-Barr Inc. also reserves the right to add or delete substances on the list above, especially if mandated by changes in existing Federal, State or local regulations or laws.

An employee who adulterates, attempts to adulterate or substitute a specimen or otherwise manipulates the testing process will be terminated. A refusal to produce/provide a specimen is considered a positive test unless there's a verifiable medical reason that the specimen could not be produced.

There are four types of results that can be returned following a drug test.

1. Positive drug test-means that the level of illicit substance in the donors system is above the cut-off level. The offer of employment is removed, or the procedures for existing employees described in this policy will take effect.
2. Positive Dilute test-means the results are positive and there is the possibility the sample was adulterated. The same procedure as a positive result will be used.
3. Negative drug test-means that the level of illicit substance in the donors system is below the cut-off level or non-existent, the offer of employment continues and no further action is taken.
4. Negative Dilute test-will be accepted for compliance with this policy.

IV. SPECIMEN COLLECTION PROCEDURE

Urine specimens and breath testing will be conducted by trained collection personnel who meet the standards for collection and testing. Confidentiality is required from our collection sites and labs. Employees are permitted to provide urine samples in private, but are subject to strict scrutiny by collection personnel so as to avoid any alteration or substitution of the specimen. Breath alcohol testing will likewise be done in an area that affords the individual privacy. In all cases, there will only be one individual tested at a time. Failure to appear for testing when scheduled shall be considered refusal to participate in testing, and will an employee to the range of disciplinary actions, including dismissal, and an applicant to the cancellation of an offer of employment. An observed voiding will only occur if there is grounds for suspecting manipulation of the testing process.

V. REVIEW OF TEST RESULTS

To ensure that every employee who is tested is treated fairly, we have hired a Medical Review Officer ("MRO"). The MRO is a doctor with a specialized knowledge of substance abuse disorders and will be able to determine whether there are any valid reasons for the presence in the employee's system for the substance that was tested positive.

VI. EMPLOYEES' RIGHTS WHEN THERE'S A POSITIVE TEST RESULT

An employee who tests positive under this policy will be given an opportunity to explain the findings to the MRO prior to the issuance of a positive test result to IBI. Upon receipt of a confirmed positive finding, the MRO will attempt to contact the employee by telephone or in person. If contact is made by the MRO, the employee will be informed of the positive finding and given an opportunity to rebut or explain the findings. The MRO can request information on recent medical history and on medications taken within the last thirty days by the employee.

If the MRO finds support in the explanation offered by the employee, the employee may be asked to provide documentary evidence to support the employee's position (for example, names of treating physicians, pharmacies where prescriptions have been filled, etc.). A failure on the part of the employee to provide such documentary evidence will result in the issuance of a positive report by the MRO with no attendant medical explanation. A medical disqualification of the employee will result. If the employee fails to contact the MRO as instructed, the MRO will issue a positive report to Ingle-Barr Inc.

VII. REPORTING OF RESULTS

All test results will be reported to the MRO prior to the results being issued to IBI. The MRO will receive a detailed report of the findings of the analysis from the testing laboratory. Each substance tested for will be listed along with the results of the testing. Ingle-Barr Inc. will receive a summary report, and this report will indicate that the employee passed or failed the test. All of these procedures are intended to be consistent with the most current guidelines for Medical Review Officers, published by the Department of Health and Human Services.

IX. POSITIVE & POSITIVE DILUTE TEST RESULTS

Employees who are found to have a confirmed positive, positive dilute drug, or alcohol test will be immediately taken off safety-sensitive duties and are subject to discipline up to and including termination.

X. TERMINATION NOTICES

In those cases where substance testing results in the termination of employment, all termination notices will list "misconduct" as the reason. Termination shall be deemed "for cause."

XII. DEFINITIONS

Blood Alcohol Content (BAC) - The way a person reacts to alcohol depends on many factors, including gender, weight, and rate of alcohol intake. All of these factors influence the person's blood alcohol concentration, or BAC. BAC is expressed as the percentage of alcohol in deciliters of blood.

Prescription Drug Abuse – Taking prescriptions drugs in ways other than directed by the doctor, that is more often than prescribed or in larger quantities than prescribed. Taking someone else’s medication that was not prescribed to you.

Medical Records requested/required – IBI will only ask for the most basic information necessary to determine an employees’ ability or fitness to perform his normal duties, or for evidence relating to an accident.

Safety Sensitive Duties – The following list are samples of safety sensitive duties. This list includes, but is not limited to these duties.

- | | | |
|---------------------------------|---------------------------------|-----------------------|
| Operating motor vehicles | Operating equipment | Operating power tools |
| Working 6’ or more above ground | Working on electrical equipment | Powder actuated tools |
| Handling hazardous chemicals | | |

Any operation that may cause injury to the operator or any other employee or person if not under complete physical control.

XII. CLOSING STATEMENT

The intent of this policy is to offer a helping hand to those who need it, while sending a clear message that the illegal drug use and alcohol abuse are incompatible with employment at Ingle-Barr Inc.

March 18, 2009

**ACKNOWLEDGEMENT OF RECEIPT
FOR
Ingle-Barr Inc. Drug-Free Workplace Policy**

Signing this form acknowledges that the employee has received a copy of Ingle-Barr Inc.'s Drug-Free Policy, has had the opportunity to discuss the Policy and have questions answered, and understands all of the provisions in the Policy. Although it reflects IBI's current policy regarding substance use, it may be necessary to amend the policy from time to time to best serve the needs of our organization. However, any changes deemed necessary will be made in writing, and the modified Policy will be shared with every employee.

By my signature below, I acknowledge that I have received a copy of the drug-free policy of Ingle-Barr Inc. I understand that it is my obligation to read, and understand and comply with the procedures and provisions contained within this policy.

Date Signed

Employee's Signature

Witness Signature

Printed Name of Employee

LAST CHANCE AGREEMENT

On _____ (date), management has agreed to your request to seek counseling and referral to a rehabilitation program for alcohol and drug use. The following conditions apply to your rehabilitation program:

1. You must authorize an approved employee assistance counselor to provide proof of enrollment in an alcohol/drug abuse rehabilitation program and proof of attendance at all required sessions on a monthly basis to Ingle-Barr Inc.'s Drug-Free Coordinator. IBI will closely monitor your attendance and will terminate your employment (cancel this agreement) if you do not regularly attend all required sessions.
2. You will pay for all costs of rehabilitation that are not covered under IBI's benefits plan.
3. During the 12 months following completion of your rehabilitation program, the company may test you for alcohol and /or drug use on an unannounced basis to determine if you are in compliance with IBI's Drug-Free Policy. IBI will promptly terminate your employment if you refuse to submit to testing or if you test positive during this period.
4. You must meet all established standards of conduct and job performance. IBI will terminate you if your on-the-job conduct or job performance is unsatisfactory. Satisfactory performance includes ongoing compliance with the company's drug/alcohol testing policy, including testing if there is reasonable suspicion of a violation of the prohibition of use.
5. Nothing in this agreement alters your employment status. Ingle-Barr Inc. hopes its employment relationship with you will be a happy and enduring one. Nevertheless, you remain free to resign your employment (terminate your agreement) at any time for any or no reason without notice. Similarly, IBI reserves the right to terminate you for any or no reason, without notice. No one can alter your at-will status except the President, in writing.

I voluntarily agree to all of the above conditions and authorize an approved employee assistance counselor to provide IBI with proof of my enrollment and attendance in an approved rehabilitation program.

Employee Signature

Ingle-Barr Inc. Representative

Witness

Witness

Date Agreement Signed

THIS POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>NAME</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94	DRUG & ALCOHOL	√		DAVID S. OVERLY
1/18/96		√		DSO
2/16/97			√	DSO
1/21/98		√		DSO
8/13/99		√		DSO
10/16/00		√		DSO
01/16/02		√		DSO
08/28/02		√		DSO
01/28/04			√	DSO
10/20/04		√		DSO
11/20/05		√		DSO
09/01/06		√		DSO
03/18/09		√		DSO
04/27/10		√		DSO
07/14/11			√	DSO
02/02/15		√		DSO
05/31/17		√		DSO

ACCIDENT INVESTIGATION

All accidents, including “near miss” incidents, must be immediately reported to a supervisor, and will be investigated to determine the cause of the accident. It is extremely important that the investigation is “fact finding,” but not “fault finding.”

After the cause is determined, immediate action may be taken to control or eliminate the hazard before another incident can occur.

Depending on the severity of the accident, job superintendent or foreman, and possibly the safety officer and /or upper management personnel, will participate in the investigation. All reports will be forwarded to management for review and for worker’s compensation notification.

As soon as possible after the incident, the area should be secured to prevent any changes prior to the investigation. If appropriate, equipment tools should be removed from the area and stored safely for further review.

Accident reports should be factual, complete documents, finalized within 24 hours of the accident, if possible. They will include the following information:

- Employee information - name, address, social security number, gender, occupation, date of birth and training history.
- Jobsite information - address and special job conditions (environmental concerns, weather, etc.)
- Accident data - date and time of the accident, type of accident, what the employee was doing when the accident occurred, the series of events leading to the accident, materials and equipment involved, unsafe conditions or acts, previously known or reported problems with the action and other contributing factors.
- Injury data - nature and severity of the injury and body part or parts injured.
- Interview with the injured party as soon as possible
- Interview with witness - names and signatures, along with detailed statements obtained in a private setting as soon as possible following the incident.
- Safety rules - the pertinent rules and regulations in effect at the time of the incident, and their effect on the situation.
- Photographs and /or drawings taken as soon as possible, to avoid changed conditions.
- Analysis - a determination of the primary, secondary and contributing causes of the accident, without assignment of blame.
- Corrective action - steps that might be taken to prevent future occurrences of the same or similar type of accident, and assignment of responsibility and accountability for corrective action.

ACCIDENT INVESTIGATION REPORT

JOB INFORMATION

EMPLOYER _____ **SUPERVISOR'S NAME** _____

JOB _____ **SITE ADDRESS** _____

SPECIAL JOB OR WEATHER CONDITIONS _____

EMPLOYEE INFORMATION

EMPLOYEE NAME _____

ADDRESS _____

SSN _____ **SEX** _____ **DATE OF BIRTH** _____

TITLE _____ **YEARS AT THIS POSITION** _____

PERTINENT TRAINING REQUIREMENTS FULFILLED _____

INJURY DATA

NATURE OF THE INJURY AND BODY PARTS INJURED _____

WHO PROVIDED FIRST AID? _____

WHAT TYPE OF FIRST AID WAS PROVIDED AND WHEN? _____

ACCIDENT INVESTIGATION REPORT

WHAT PERSONAL PROTECTIVE EQUIPMENT WAS REQUIRED AND WAS IT USED CORRECTLY?

WHAT TOOLS, MACHINERY AND MATERIALS WERE BEING USED AND WERE THEY USED CORRECTLY?

WAS THERE ANY PROPERTY OR EQUIPMENT DAMAGE? IF YES, EXPLAIN

SAFETY RULES

WHAT PERTINENT SAFETY RULES WERE IN EFFECT? _____

WERE THE RULES BEING FOLLOWED CORRECTLY? IF NOT, EXPLAIN _____

ACCIDENT INVESTIGATION REPORT

EMPLOYEE STATEMENTS

INTERVIEWS WITH INJURED AND WITNESSES - SEE ATTACHED SHEETS

WITNESS NAMES AND ADDRESS

ANALYSIS

CORRECTIVE AND PREVENTATIVE ACTION

INVESTIGATOR'S NAME _____

INVESTIGATOR'S SIGNATURE _____

SUPERVISOR'S SIGNATURE _____

DATE INVESTIGATION COMPLETED _____

ACCIDENT INVESTIGATION WITNESS STATEMENT

INTERVIEWER NAME _____

WITNESS NAME _____

DATE OF INTERVIEW _____

An interview with the above named witness was conducted by _____
to help determine the facts and circumstances surrounding an accident which occurred on _____
at approximately _____.

The attached report was obtained from the interview.

I have read the following report consisting of _____ pages, and complied from details of my statement. I agree that it is correct and true to the best of my knowledge.

WITNESS SIGNATURE _____

SIGNATURE OF INTERVIEWER _____

THIS ACCIDENT INVESTIGATION POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94	*		DAVID S. OVERLY
1/23/95	*		DSO
11/23/95	*		DSO
10/11/96		*	DSO
1/21/98	√		DSO
10/12/99		√	DSO
10/16/00		√	DSO
01/21/02	√		DSO
08/28/02		√	DSO
01/28/04	√		DSO
10/20/04	√		DSO
11/20/05		√	DSO
06/20/06		√	DSO
03/18/09	√		DSO
04/27/10		√	DSO
07/14/11		√	DSO
04/14/13	√		DSO
06/14/16	√		DSO

FALL PROTECTION POLICY

Falls are the leading cause of deaths in the construction industry. Most fatalities occur when employees fall from open-sided floors and through floor openings. Falls from as little as 4 to 6 feet can cause serious lost-time accidents and sometimes death. Open-sided floors and platforms 6 feet or more in height must be guarded.

The issues of how to provide fall protection for employees at construction sites are difficult ones. There are so many different types of work and so many different kinds of fall hazards that it is not possible to organize fall protection into a neat set of rules that fit all situations. OSHA reflects this difficulty when it places its rules for fall protection in several different subparts in the Construction Standards, depending primarily on the nature of the work being undertaken. There are separate locations, for example, for fall protection during work on scaffolds, during work on certain cranes and derricks, during work in tunnels, during work on stairways and ladders, during steel erection, etc.

GENERAL RULE: If you are 6' or less from a 6' fall, you need a fall protection system.

WHAT TYPE OF FALL PROTECTION WILL I NEED?

In most cases, a guardrail system, a safety net system, or a personal fall arrest system must be used. In some cases fences, barricades, covers, equipment guards or a controlled access zone may be used. Employees must be protected not just from falling off a surface, but from falling through holes and from having objects fall on them from above.

An employer may use a variety of fall protection systems to protect employees. These systems must meet OSHA requirements. The competent person must make frequent and regular inspections, as required, to determine if these systems meet OSHA requirements before employees rely on these systems. More detail may be found in 29 CFR 1926.502.

Employers engaged in leading edge work, precast concrete erection work, or residential construction work who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment may develop a **fall protection plan** that provides other measures to be taken to reduce or eliminate fall hazards for workers. Fall protection plans must conform to OSHA provisions and be prepared by a qualified person. Although a fall protection is required, it does not have to be written, nor does it have to be site specific. Fall protection plans must identify locations where conventional fall protection methods cannot be used and set up controlled access zones and any necessary safety monitoring systems.

What will my personal fall arrest system do to protect me?

A personal fall arrest system places the employee into a body harness that is fastened to a secure anchorage so that he/she cannot fall. Body belts are not acceptable as personal fall arrest systems. A few key requirements:

- There should be no free fall more than 6 feet.
- There should be prompt rescue after a fall.
- PFAS's must be inspected prior to each use.
- PFAS's must not be used until they have been inspected by a competent person.

Safety Line Anchorages must be independent of any platform anchorage and capable of supporting at least 5,000 lbs. per worker.

Guardrail systems provide a barrier to protect the employee from falling:

- Top edge of the guardrail must be 39-45 inches above the walking/working level.
- There must also be protection from falling between the top rail and the walking/working surface. Midrails, screens, mesh, or intermediate vertical members may be used for this protection. There are specific requirements for their installation.
- The protective barriers must be strong enough to support a falling employee. They must be capable of 200lbs of force outward, inward and downward. Wood, chain and wire rope may be used for top rails and midrails.
- Toeboards attached to the bottom of the guardrail system to keep objects from falling to lower surfaces are to be at least 3 ½" high.

Safety net systems catch the employee if he/she does fall. The safety nets:

- Must be strong enough to support a falling employee;
- Must have sufficiently small mesh openings so the employee cannot fall through the net;
- Must be close enough to the surface of the walking/working surface so that the fall into the safety net will not still injure the employee (never more than 30 feet below the walking/working level);
- Must be close enough to the edge of the working surface (the **outer edge** of the net between 8-13 feet from the edge of the walking/working surface, depending on the distance to the walking/working surface) so that the falling employee will not slip past the net.

Where should I expect fall protection to be provided?

- When an employee is on a walking/working surface that has an unprotected edge.
- When an employee is constructing a leading edge.
- When an employee may fall through a hole in the walking/working surface.
- When an employee is working on the face of formwork or reinforcing steel.
- When employees are on ramps, runways and other walkways.
- When employees are working at the edge of an excavation, well, pit, or shaft.
- When employees are working above dangerous equipment (even employees working less than six feet over dangerous equipment must be protected).
- When an employee is performing overhand bricklaying and related work.
- When an employee is performing roofing work.
- When an employee is engaging in precast concrete erection (with certain exceptions).
- When an employee is engaged in residential construction (with certain exceptions).

Good Work Practices

- Perform work at ground level if possible
Example: building prefab roofs on the ground and lifting into place with a crane
- Tether or restrain workers so they can't reach the edge
- Designate and use safety monitors (This is less desirable of all the systems)
- Use conventional fall protection

How should I be trained?

Training must be provided to each employee who might be exposed to fall hazards. In construction, this will involve most employees. The training by a competent person must enable each employee to recognize the hazards of falling and train employees in the procedures to be followed to minimize these hazards.

The training must include:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection;
- The role of each employee in the safety monitoring system when this system is used;
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and
- The role of employees in fall protection plans.
- The standards of subpart M

The employer must verify compliance with the training requirements by preparing a written certification record. The employer must retrain any employee when the employer has reason to believe that the trained employee does not have the understanding and skill required.

INGLE-BARR INC.

FALL PROTECTION WORK PLAN

A written fall protection plan must be implemented for each jobsite where there is a fall hazard of 6' or greater. A competent person will complete the form and accurately describe the type of fall hazard and method used to eliminate it or protect the employee from it. This includes protection from falling objects.

THIS WORK PLAN WILL BE AVAILABLE ON THE JOB SITE FOR INSPECTION.

1. JOB SITE INFORMATION

JOB NAME _____

JOB ADDRESS _____

JOB FOREMAN _____ DATE _____

JOB PHONE _____ FAX _____

SCOPE OF WORK _____

FIRST AID TRAINED EMPOLYEES ON SITE

1. _____
2. _____
3. _____

FIRST AID KIT LOCATION

EMERGENCY PHONE NUMBERS

FIRE _____

EMS _____

POLICE _____

TELEPHONE LOCATION _____

Fall Hazard Identification and Protection Worksheet

√	Hazard Type	General Location	Protection Method	Overhead Protection
	Roof > 4 1/2 Pitch			
	Roof < 4 1/2 Pitch			
	Skylight Opening			
	Roof Opening			
	Floor Openings			
	Window Openings			
	Open Sided Floors			
	Decks			
	Balconies			
	Leading Edge Work			
	Mobile Lift Work			
	Excavation Edges			
	Grade Drop-Offs			
	Elevator Shafts			
	Other			

Fall Protection Methods: Select a fall protection method from the list below for each hazard identified above.

Standard Guardrails	Fall arrest Harness	Fall Restraint Harness/Belt
Warning Line System	Safety Net	Cover or Hatch
Warning Line & Safety Monitor	Positioning Belt	Other _____

Overhead Hazard Protection Methods: For each overhead hazard identified, specify the method(s) of protection for workers below.

Hard Hats Required	Screens on Guardrails
Overhead Hazard Signs	Barricade to Control Access Area
Debris Nets	Other: _____
Toe Boards on Guardrails	Other: _____

Fall protection systems will be assembled and maintained according to manufacturer's instructions when using a manufactured system. A copy of those instructions should be available on-site for reference. Any fall protection system shall meet OSHA 1926 Subpart M. General guidelines for assembly of some systems are listed below.

Standard Guardrails Must:

- Be 42" +/- 3" (39" to 45") above the work surface at the top rail with a midrail and toe board.
- Be able to withstand 200 pounds of force in any direction.
- Not have significant deflection.
- Be inspected regularly for damage and missing parts.

A guard rail does not protect a person on stilts, ladder or other elevated object. Other fall protection is required or the guard rail system can be increased to the additional height of stilts.

Post material _____ Rail Material _____

Post Spacing (8' max.) _____ Anchor Method _____

Other Instructions _____

Fall Arrest Harness:

- Must have anchor points capable of supporting 5000 pounds per person.
- Limits the fall distance to a maximum of 6'.
- Prevents the person from contacting a lower level.
- Lifelines and lanyards must be placed or protected from sharp or abrasive contacts.
- Snap hooks may not be connected to each other, or to loops in webbing.
- Inspect components for damage, wear, cuts, tears or missing parts.

System Component List: _____

Anchor Point at this worksite _____

Other Instructions _____

Fall Restraint Harness/Belt:

Anchor Points:

- Must withstand 4 times the intended load.
- Must always prevent a free fall from the work surface.
- Inspect components for damage, wear, cuts, tears or missing parts.

System component List _____

Anchor Point at this worksite _____

Other Instructions _____

Safety Nets Must:

- Be installed no more than 30' vertically of the work surface.
- Extend out from the outermost projection of the work surface as specified below.
- Must be tested or certified to withstand a 400 pound object dropped from the highest work surface.
- Mesh at any point must not exceed 36 square inches with the largest opening being 6" side to side.
- Inspect weekly for mildew, wear or damage and remove any objects in the net as soon as possible.

A person falling into the net cannot contact any object below the net.

System Component List _____

Anchor Point at this Worksite _____

Maximum Fall Distance from Work Surface to Net _____

Distance from Outer Edge of Net to Outermost Edge of Work Surface:

_____ Up to 5' Fall = 8' _____ 5' to 10' Fall = 10' _____ > 10' Fall = 13'

Other Instructions _____

Covers or Hatches (gap or void 2" at smallest dimension):

- Be able to support twice the weight of employee and equipment that would be on it at the same time or twice the maximum axle load of the largest vehicle that would cross it.
- Be secured to prevent accidental displacement.
- Be marked with the word "Cover" or "Hole"

Material to use for cover - _____

Other Instructions _____

Warning Line Systems Must:

- Block access to all fall hazards in the work area.
- Be placed 6’ back from the edge.
- Be made of rope wire or chain between 39” and 45” above the surface height.
- Be flagged at 6’ intervals.
- Be attached to stanchions such that pulling on one section of chain will not take up slack in the other sections.
- Have stanchions that are able to withstand a 16 lb. force applied horizontally at 30” high.

System Component List: _____

Other Instructions _____

Controlled Access Zones must:

- Meet the “Warning Line System” requirements described above, 6’ to 25’ back from the edge plus the following when employees work between the fall hazard and the warning line (“control zone”).
- Have a competent person designated as “Monitor” who
 - Wears a high-visibility vest marked “Monitor”.
 - Is in visual and voice range of employees in the control zone
 - Is on the same working surface
 - Has no other duties except watching, warning and directing employees regarding fall hazards.
 - Has a maximum of eight employees working in the control zone (all of whom also wear high-visibility vests and are easily distinguishable from the Monitor).

This system is not to be used in adverse weather conditions such as snow, rain, or high wind, nor after dark.

Monitor(s): _____

Control Zone Employees:

Other Fall Protection System: Provide a description of how the system is to be assembled, disassembled, operated, inspected, and maintained, including specifications for materials to be used in its construction:

Fall Protection Work Plan

Emergencies and Injuries:

First Aid Trained Employee(s) On Site:

Name: _____ Title: _____

Name: _____ Title: _____

First Aid Kit Location(s): _____

Nearest Medical Facility: _____

Emergency Services Phone Numbers:

Medical: _____ Fire: _____ Police: _____

Location of Nearest Telephone: _____

If a crew member is injured at elevation, the supervisor will evaluate the employee's condition and administer first aid. Emergency services will be called as needed. If an injured employee can't return to ground level, the employee will be brought down to a lower level by emergency services. The following equipment is available on site to facilitate lowering the injured worker:

Employee Training:

All employees must be instructed on the provisions of this plan and have been trained in the proper use of the fall protection equipment involved. By signing this document, the employees acknowledge that they understand the plan and have been trained in the use of the equipment.

Name:	Signature:	Date:

The competent person's signature verifies that the hazard analysis has been done, the employees informed of the plan's provisions and that employees have received training in the fall protection systems in use:

Name:	Signature:	Date:

THIS FALL PROTECTION POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
07/12/2011	*		DAVID S. OVERLY
07/06/2012		*	DAVID S. OVERLY
06/14/2016	*		DSO

RESPIRATOR POLICY

I. PURPOSE;

The purpose of this operating procedure is to insure the protection of all employees from respiratory hazard, through proper use of respirators. Respirators are to be used only where engineering control of respirator hazards is not feasible, while engineering controls are being installed, or in emergencies.

II. RESPONSIBILITY;

The company safety officer is David S. Overly. He is solely responsible for all facets of this program and has full authority to make decisions to ensure success of this program. This authority includes hiring personnel and equipment purchases necessary to implement and operate the program. The safety officer will develop written detailed instructions covering each of the basic elements in this program, and is the sole person authorized to amend these instructions. Ingle-Barr Inc. has expressly authorized the safety officer to halt any operation of the company where there is a danger of serious personal injury. This policy includes respiratory hazards.

PROGRAM ELEMENTS;

The safety officer will develop detailed written standard operating procedures governing the selection and use of respirators, using NIOSH Respirator Decision Logic as a guideline. Outside consultation, manufacturer's assistance and other recognized authorities will be consulted if there is any doubt regarding proper selection and use. These detailed procedures will be included as appendices to this respirator program. Only the safety officer may amend these procedures.

Respirators will be selected on the basis of hazards to which the employee is exposed. All selections will be made by the safety officer. Only OSHA/NIOSH certified respirators will be selected and used.

The user will be instructed and trained in the proper use of respirators and their limitations. Both supervisors and workers will be so instructed by the safety officer. Training will provide the employee an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, and wear it in normal air for long familiarity period and finally wear it in a test atmosphere. Every respirator wearer will receive fitting instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators should not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. No employees of Ingle-Barr Inc. who are required to wear respirators, may wear beards. Also the absence of one or more dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors will be evaluated by periodic checks. To assure proper protection, the face piece fit will be checked by the wearer each time the wearer puts on the respirator. This will be done by following the manufacturer's facepiece-fitting instructions.

Where practicable, the respirators will be assigned to individual workers for their exclusive use.

Respirators will be thoroughly cleaned and disinfected. Those issued for the exclusive use of one worker will be cleaned after each day's use, or more often if necessary. Those used by more than one worker will be thoroughly cleaned and disinfected after each use. The safety officer will establish a respirator cleaning and maintenance facility and develop detailed cleaning instructions.

Ingle-Barr Inc. Safety

The central respirator cleaning facility will store respirators in a clean and sanitary location.

Respirators used routinely will be inspected during cleaning. Worn or deteriorated parts will be replaced. Respirators for emergency use such as self-contained devices will be inspected at least once a month and after each use. Inspection for SCBA breathing gas pressure will be performed weekly.

Appropriate surveillance of work area conditions and degree of employee exposure or stress will be maintained.

There will be regular inspection and evaluation to determine the continued effectiveness of the program. The safety officer will make frequent inspections of all areas where respirators are used to ensure compliance with the respiratory protection programs.

Persons will not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The employee's physician will determine what health and physical conditions are pertinent. The respirator user's medical status will be reviewed annually

Only certified respirators will be used.

Wilbur B. Poole
President, Ingle-Barr Inc.

WORKER TRAINING;

What you need to know before wearing your respirator;

1. The reasons why you need respirator protection
2. The nature, extent and effects of respiratory hazards to which you may be exposed
3. An explanation of why engineering controls are not being applied or are not adequate and what effort is being made to reduce or eliminate the need for respirators
4. An explanation of why a particular type of respirator has been selected for a specific for a specific hazard
5. An explanation of the operation and capabilities and limitations of the respirator
6. Instruction in inspection, donning, checking the fit of and wear it in a test atmosphere
7. An opportunity for each respirator wearer to handle the respirator, learn how to don and wear it properly, checks it's seals, wear it in a safe atmosphere and wear it in a test atmosphere
8. An explanation of proper maintenance and storage
9. Instructions in how to recognize and cope with emergency situations
10. Instructions as needed for special respirator use
11. Regulations concerning respirator use

RESPIRATOR ASSIGNMENT;

Whenever practical a respirator will be assigned to an employee for his exclusive use. Permanent markings should be placed on the respirator to identify its user (be sure marking does not affect respirator performance). Records will be maintained to record;

1. date of initial use
2. name of employee to whom it was issued
3. date of re-issue
4. list of repairs

Respirator cartridges are not interchangeable between brands. Each respirator must be used with the same brand of cartridges assigned to them.

RESPIRATOR CLEANING AND DISINFECTING;

Respirators shall be regularly cleaned and disinfected. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

CLEANING AND SANITIZING;

Respirators must be cleaned and disinfected before issuing them to the employees and after each use.

TO CLEAN YOUR RESPIRATOR;

1. take off the cartridges, filters, headbands and filter holders, completely disassemble respirator
2. wash the facepiece in soapy water or in the solution the manufacturer recommends. Follow with a disinfecting rinse.
3. Rinse in warm water and let the facepiece air dry on flat surface, do not hang the respirator, this could cause distortion of the facepiece which could prevent face to face seals in the future.

Respirators wipe pads may be used to supplement your cleaning for removing body oils and perspiration.

STORAGE;

Respirators shall be stored in a convenient, clean and sanitary location.

Respirators will be stored in a way that protects it from dust, sunlight, heat, extreme cold, and excessive moisture or damaging chemicals. A clean, re-sealable plastic bag provides a contaminant-free storage method. Respirators will not be hung by the headbands or placed in any position that may cause distortion which could lead to a damaged face-to-mask seal.

INSPECTION AND MAINTENANCE;

Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.

INSPECTION;

Look over your respirator every day before and after you use it to make sure it's in good condition. These routine checks are vital in maintaining a respirator that will protect you from hazardous dusts, fumes, mists, vapors or gases.

1. take the respirator apart and check all valves and seats for dirt or grit - anything that might cause a leak
2. then check all parts for wear or damage, paying special attention to rubber or plastic parts which can deteriorate. Replace any worn or damaged parts right away.
3. SCBA's and EEFA's must be inspected monthly. These types of respirators must be returned to the manufacture or to a trained technician for repair or adjustment.
4. remember to keep a written record of inspection dates and findings.

MAINTENANCE;

If a routine inspection or wearer notices that something is wrong with the respirator, repairs must be made immediately or a replacement respirator must be provided. Repairs must be made only by trained personnel using parts specifically designed for the particular brand or type of respirator. For adjustments not in the instructions, refer to the manufacturer for help.

SURVEILLANCE OR THE WORK AREA;

Appropriate surveillance of work area conditions will continue to identify respiratory hazards, such as changes in operating procedure, temperature, air movement, and humidity or work practices. Periodic monitoring will be conducted to determine levels of contaminate concentrations. This testing ensures that exposure levels have not risen above the protection capabilities of your respirator.

MEDICAL SURVEILLANCE

Persons should not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. A local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (annually).

Only those employees able to perform the assigned task while wearing a respirator can be given such a position. Users must then be medically evaluated every year to determine their continued ability to perform their job.

Employees will furnish the following:

1. History of personal respiratory diseases (asthma, emphysema, or chronic lung disease).
2. Work history relating to exposure to asbestos, silica, cotton dust, beryllium within the last 10 years.
3. Any other medical information that may affect a worker's ability or inability to wear and use respirators.

FIT TESTING

Every time you put on a respirator you need to check its fit. These fit checks, positive and negative, are easy to perform and take very little time. For employees who wear negative-pressure respirators (such as air-purifying, maintenance free and gas masks) more intensive fit testing must be completed. Qualitative and quantitative fit tests provide more in-depth results that you can use to select specific types, brands and models of respirators for use in the workplace.

Qualitative Fit Test

In these tests, a respirator wearer is exposed to a harmless irritant smoke or odorous vapor while performing exercises similar to workplace functions that could cause the facepiece leakage. The respirator he/she is wearing features cartridges and/or filters that should remove the test agent from the air. If the wearer cannot detect the odor, you have a good fit.

Quantitative Fit Test

A quantitative fit test measures the contaminant inside the test atmosphere and inside the respirator itself. This test provides the most accurate and detailed information.

1. respirator wearer enters test chamber with respirator on
2. harmless aerosol is introduced into the test chamber
3. respirator wearer performs exercises similar to workplace functions that could cause facepiece leakage
4. air inside and outside of the facepiece is measured for aerosol contamination

Fit Checks

Perform these tests every time you put on your respirator to make sure face-to mask is airtight and that your respirator is working properly.

APPROVED/ACCEPTED RESPIRATORS

Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respirator protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U.S. Department of the Interior, Bureau of Mines and the U.S. Department of Agriculture are recognized as such authorities. Although respirators listed by the U.S. Department of the Interior, Bureau of Mines, is the agency now responsible for the testing and approving pesticides respirators.

RESPIRATOR INSPECTION RECORD

1. TYPE OF RESPIRATOR _____

2. NUMBER _____

3. DEFECTS FOUND

A. INHALATION VALVE _____

B. EXHALATION VALVE ASSEMBLY _____

C. FACEPIECE _____

D. HEADBANDS _____

E. CARTRIDGE/CANISTER _____

F. CARTRIDGE HOLDER _____

G. FILTER _____

H. HARNESS ASSEMBLY _____

I. HOSE ASSEMBLY _____

J. SPEAKING DIAPHRAM _____

K. GASKETS _____

L. CONNECTIONS _____

M. OTHER DEFECTS _____

RESPIRATOR FIT TEST RECORD

EMPLOYEE _____ DATE _____

EMPLOYEE JOB DISCRPTION _____

RESPIRATOR TYPE _____

MANUFACTURER _____

MODEL _____

NIOSH APPROVAL NUMBER _____

CONDITIONS WHICH COULD AFFECT RESPIRATOR FIT;

_____ CLEAN SHAVEN	_____ FACIAL HAIR
_____ 1-2 DAY BEARD	_____ DENTURES
_____ 2 + DAY BEARD	_____ GLASSES
_____ MOUSTACHE	_____ NONE

COMMENTS _____

FIT CHECKS;

NEGATIVE PRESSURE	_____ PASS	_____ FAIL	_____ NONE DONE
POSITIVE PRESSURE	_____ PASS	_____ FAIL	_____ NONE DONE

FIT TESTING;

_____ QUANTITATIVE	_____ ISOAMYL ACETATE	_____ IRRITANT SMOKE
--------------------	-----------------------	----------------------

FIT FACTOR _____

QUALITIVE
_____ PASS
_____ FAIL

QUALITIVE
_____ PASS
_____ FAIL

COMMENTS _____

EMPLOYEE ACKNOWLEDGE OF TEST RESULTS

EMPLOYEE SIGNATURE _____ DATE _____

TEST CONDUCTED BY _____ DATE _____

THIS RESPIRATOR POLICY WAS REVIEWED AND/OR REVISED ON

<u>DATE</u>	<u>REVISED</u>	<u>REVIEWED</u>	<u>REVISION BY</u>
12/21/94		√	DSO
6/6/95		*	DSO
1/18/96		*	DSO
6/21/97		*	DSO
1/21/98		√	DSO
2/2/99		√	DSO
9/9/99		√	DSO
10/16/00	√		DSO
01/21/02		√	DSO
08/28/02		√	DSO
01/28/04		√	DSO
10/20/04		√	DSO
11/20/05		√	DSO
06/20/06	√		DSO
03/18/09	√		DSO
04/27/10		√	DSO
07/14/14	√		DSO
06/14/16		√	DSO

CONFINED SPACE POLICY

Purpose

To provide a safe work environment when it is necessary to enter a confined space.

Responsibilities

ENTRANT;

- To follow the confined space entry procedures exactly.
- To insure that the entry permit is complete, timely, and properly posted.
- To use appropriate safety equipment and monitors as required.
- To know the hazards that may be faced during entry, including signs and symptoms of adverse exposures.
- To communicate with the attendant as necessary.
- To exit the confined space if conditions occur that may increase the risk of continued occupancy.
- To enter a hazardous atmosphere confined space only under the direct supervision of a Health or Safety Professional.
- Has attended "Confined Space Entry" training course.

ATTENDANT;

- To follow the confined space entry procedures exactly.
- To insure the confined entry permit is complete, timely and properly posted.
- Use appropriate safety equipment and monitors as required.
- Continuously maintain an accurate count of authorized entrants.
- Remain outside the permit space during entry operations until relieved by another attendant.
- Communicate with entrants as necessary.
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space.
- To know the hazards that may be faced during entry, including signs and symptoms of adverse exposures.
- Order the entrants to evacuate the confined space if deemed necessary.
- Summon emergency personnel if apparent problem affects entrants.
- Perform no duties that might interfere with the primary duty to observe and protect the entrants.
- Perform non-entry rescues as specified by the emergency response procedures.
- To be able to recognize symptoms of environmental related illness on entrants.
- Has attended "Confined Space Entry" training course.

ENTRY SUPERVISOR;

- To follow the confined space entry procedures exactly.
- To insure that the entry permit is complete, timely and properly posted and filed.
- To insure that necessary safety equipment is present and in good condition prior to entry.
- To insure that the confined space atmosphere is monitored by a qualified person as often as conditions require (at least once per shift).
- To insure that confined space entry procedures are followed exactly.
- To know the hazards that may be faced during entry, including signs and symptoms of adverse effects.
- Terminate the entry and permit when the job is completed or when conditions occur that may increase the risk of continuous occupancy.
- Verify that rescue communications are functional.
- Insure that only authorized entrants have access to the confined space.
- Has attended "Confined Space Course".

RESCUE AND EMERGENCY SERVICES;

- Use appropriate safety and rescue equipment as described in the Emergency Response Procedure.
- Insure that rescue training procedures are followed.

QUALIFIED PERSON;

- To periodically monitor the atmosphere of the confined spaces as required by the operating or maintenance departments.
- To train, as required, personnel to use continuous monitors in confined spaces.
- To maintain instruments used to monitor confined space atmospheres in good working order and calibration.
- To maintain records associated with the calibration, maintenance and use of atmosphere monitoring instruments.
- To advise individuals and supervisors as to the frequency and type of monitoring necessary to insure the air quality of the confined space.
- Has trained in the following, confined space entry, atmospheric testing of confined spaces, calibration of instruments.

CONFINED SPACE PROCEDURES

I. DEFINITIONS;

- A. attendant-an individual stationed outside one or more permit spaces and who observes the authorized entrants and performs all attendant responsibilities as outlined in the general policy.
- B. authorized entrant-is an employee who is authorized to enter a permit space.
- C. confined space-is a space that is large enough and so configured that an employee can enter and perform work, has limited or restricted means for entry or exit, and is not designed for contiguous employee occupancy.
- D. entry-means the action by which a person passes through an opening into a permit-required confined space.
- E. entry permit-is the printed document that is provided to allow and control entry into a permit confined space.
- F. entry supervisor-the management person (such as foreman, superintendent, etc.) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, for terminating entry as required.
- G. Hazardous Atmosphere-an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, or acute illness from one or more of the following causes:
 - 1.) flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LEL).
 - 2.) atmosphere oxygen concentration below 19.5% or above 23.5%
 - 3.) toxic atmosphere
 - 4.) any other atmosphere condition that is Immediately Dangerous to Life or Health (IDLH)
- H. Non-Permit Confined Space-a confined space that does not contain or with respect to atmospheric hazards, has the potential to contain hazardous capable of causing death or serious physical harm.
- I. Permit-Required Confined Space-(permit space) a confined space that has one or more of the following characteristics;
 - 1.) contains or has a potential to contain a hazardous atmosphere
 - 2.) contains a material that has the potential for engulfing an entrant
 - 3.) has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section or.
 - 4.) contains any other recognized serious safety or health hazard.
- J. Prohibited Condition-any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

K. Retrieval System-the equipment (including retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

L. Testing-the process by which the hazards that may confront entrants permit are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

M. Typical Confined Space (but not limited to)-

storage tanks	tank trucks
process vessels	bins
boilers	wells
ducts	silos
sewers	rail tankers
underground utility vaults	dryer cans
open top pits, trenches, and vessels	tunnels

II. GENERAL REQUIREMENTS PRIOR TO ENTRY PERMITTED CONFINED SPACES

A. Crew Meeting (Required)

1. to discuss
 - applicable confined space procedure general procedure or S.O.P.
 - material normally present in space and hazards associated with the material (i.e. hazard ratings on labels, MSDS).
 - nature of potential hazards (i.e. heat stress, toxic effects, noise, shock, etc.)
 - emergency procedures (how to get help, how to remove injured/ill person, first aid)
 - scope of job (changing hazards, i.e. welding, burning, painting)
 - ZEP procedures.
2. assign attendant as required - verify specific training, review duties and responsibilities.

B. Preparation of Permitted Confined Space

- cool, if necessary
- remove process residue
 - drain/pump out/feed out
 - flush out with appropriate fluid/air/steam/etc
- start forced ventilation as required
- isolate by means of the ZEP procedure, blanking or blinding, double block and bleed or other acceptable practices.
- lock out hazardous energy sources per ZEP procedure

III. PREPARATION FOR ENTRY INTO CONFINED SPACES

- A. Gather and Check Entry Equipment;
 - electrical equipment (lights, drill motors, etc.) must be 12 volt or ground fault protected. the GFCI protective device shall be on the outside of the confined space.
 - welding equipment shall be in good condition
 - self-contained breathing apparatus (SCBA; minimum two units) should be made readily available for use by Emergency Response Personnel.
 - safety harnesses, body (1 for each person in space and 2 spare) lifeline are required
 - equipment to remove an injured/ill person as outlined in the department standard operating procedure for the space to be entered
 - communication device to summon Emergency Response Personnel
- B. Test Atmosphere of Confined Space in the Following Order;
 - oxygen (see permissible limits)
 - flammable/explosive gases
 - toxic gases (bases on process, location and experience)
 - determine how often atmosphere must be monitored (i.e. once per shift, continuously) it is recommended to use continuous monitoring when feasible
 - test all areas and levels of the space before entry

IV. PREPARATION OF ENTRY PERMIT

- Fill out all required information (location, date, time, etc)
- Insure that all requirements defined on the permit are met (lock-out, ventilation, atmospheric etc)
- Sign permit-all required signatures must be on the permit for it to be valid, including the supervisor, person conducting the atmospheric monitoring, and all persons entering the space
- Display the permit at the entrance to confined space.

Note: Permit must be updated if work requires a shift change of personnel (i.e. entrants, attendants, entry supervisor.) At a minimum; a required entrant meeting and atmospheric test.

- Permit is valid for a period not to exceed 12 hours.
- After work is completed, permit must be removed and filed by ID number in the department where entry took place. Permits must be kept for a minimum of one year.
- Per OSHA regulation 1910.146(e)(6), permits will be reviewed annually for any problems by the department and safety office.
- Any problems encountered during an entry operation shall be noted on the permit so that the appropriate revisions to that permit and the overall procedure can be made.

V. CONDUCT WHILE IN A PERMITTED CONFINED SPACE

- The atmosphere within the space shall be periodically tested as necessary to insure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
- If a hazardous atmosphere is detected during entry, each entrant shall leave the space immediately; the space shall be evaluated to determine the source of the hazardous atmosphere before any subsequent entry takes place.
- Enter a hazardous atmosphere confined space only under the direct supervision of a Health or Safety Professional.

VI. CONTRACTORS

- Contractors will provide;
 - continuous monitors as required.
 - entry supervisors to authorized entry.
 - trained persons responsible for instrument calibration.
 - safety equipment such as harnesses and lifelines.
 - equipment needed to do the work i.e. GFCI's, lights.
 - ventilation if required.
 - post entry meeting with required personnel.
 - training of authorized entrants, attendants, entry supervisors and interment technicians.
- The company will provide;
 - emergency response and rescue i.e. SCBA's, tripods.
 - initial and shift monitoring.
 - hazard communication information on potential contaminants and applicable SOP's.
 - initial ZEP procedures.
 - entry forms.
 - post entry meeting.
 - training on company policy and procedures.
- This contractor procedure does not apply to excavations nor to equipment that has not been turned over to the company.

VII. SIGNS AND INSTRUMENTATION

A. Sign Specifications

- Permit required confined spaces shall be marked "Danger Confined Space - Do Not Enter Without Permit".
- Confined spaces where entry is not allowed (i.e. abandoned tanks) shall be marked "Danger Keep Out"
- Signs shall be fiberglass 7"x 10"
- Signs shall be located at each confined space entrance(s) or as close as physically possible.
- When attached to a wall or side of a confined space, there needs to be at least a 1" space behind the sign.
- Signs shall be kept clean and legible.
- Signs are available from the safety office.

B. Confined Space Monitoring Instruments

- Every department shall have access to a confined space monitoring kit.
- A confined space monitoring kit shall consist of;
 - a 2, 3, 4 gas detection instrument
 - internal/external pump for drawing air to the instrument
 - sampling probes and tubing to allow for sampling at all levels of a space
- Personal monitors are instruments that can be worn by employees in a space.
- Brands of instruments approved by the Safety Department are MSA, Ecotox, Industrial Scientific, Gastech and Bacharach.

VIII. RESCUE AND EMERGENCY RESPONSE

- To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permitted space, unless the retrieval equipment increases the overall risk of entry.
- Retrieval equipment shall meet the requirements of OSHA 1910.146 (k)(i-ii).
- Only emergency personnel shall be responsible for confined space rescue.

IX. TRAINING

- Chillicothe employees involved with confined space entry will be required to attend the designated courses.
- Procedures will be given to everyone for use and reference.

THIS CONFINED SPACE POLICY WAS REVIEWED AND/OR REVISED

DATE	REVIEWED	REVISED	REVISION BY
12/22/94	√		DSO
11/20/95	*		DSO
1/18/96	*		DSO
10/11/96	*		DSO
11/11/97	*		DSO
1/21/98	√		DSO
2/2/99	√		DSO
9/9/99	√		DSO
10/16/00		√	DSO
01/21/02	√		DSO
01/28/04		√	DSO
10/20/04	√		DSO
11/20/05		√	DSO
03/18/09	√		DSO
04/27/10		√	DSO
10/20/14	√		DSO
05/31/17		√	DSO

HAZARD COMMUNICATION (GHS)

PURPOSE

The purpose of this Hazard Communication Program is to ensure that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to employers and employees. The requirements of this section are intended to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3. The transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, safety data sheets and employee training.

RESPONSIBILITIES

The company President and the Safety Director shall have overall responsibility for establishment and maintenance of the program.

The company Supervisors shall have responsibility for implementation of the program.

The Site Supervisors, or his designee shall have responsibility for jobsite implementation of the program.

DEFINITIONS

"Chemical" means any substance, or mixture of substances

"Classification" means to identify the relevant data regarding the hazards of a chemical and to determine if the chemical is a hazard. Then to further determine if it is health hazard or a physical hazard.

"Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

"Exposure or exposed" means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

"Hazard class" means the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

"Hazard statement" means a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

"Hazardous chemical" means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

"Health hazard" means a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

"Label" means an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

"Label elements" means the specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

"Physical hazard" means a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas.

"Pictogram" means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

"Precautionary statement" means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

"Product identifier" means the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

"Pyrophoric gas" means a chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below.

"Safety data sheet (SDS)" means written or printed material concerning a hazardous chemical that is prepared in accordance with paragraph (g) of this section.

"Signal word" means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

"Simple asphyxiant" means a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

PROGRAM REQUIREMENTS

List of hazardous chemicals and SDS file. The site supervisor shall initiate and maintain a hazardous chemical list. This list shall include all hazardous and potentially hazardous chemicals to which personnel could be exposed. This list should be reviewed regularly. The SDS's shall be on file for all hazardous materials. The SDS sheets shall be reviewed to verify that they meet the OSHA information requirements. Refer to the SDS check list. All SDS's shall be reviewed with the applicable personnel. Special emphasis should be placed on the health hazards of the material and methods of safe handling of use. New SDS's should be reviewed as soon as practicable after receipt. New SDS's shall be reviewed prior to the use of the material on the job.

LABELS AND WARNINGS

The site supervisor shall ensure that all hazardous chemicals in the work area are properly labeled and updated, as necessary. Labels should as a minimum, list the product identifier, signal word, hazard statement, pictograms, precautionary statements, and name, address, and phone number of the chemical manufacturer/importer/distributor. When a number of stationary containers within a work area have similar contents and hazards, signs should be posted to convey the hazard information. Chemicals transferred from a labeled container to a portable container that are intended for immediate use by the employee who made the transfer do not require separate labels. If the container is to be used by any persons other than the person who made the transfer, labeling is required. Pipe or piping systems do not require labeling, but their contents should be described in training sessions.

NON-ROUTINE TASKS

When personnel are required to perform hazardous non-routine tasks (cleaning tanks, entering confined spaces, etc.), a special training session will be conducted to inform them regarding the hazardous materials to which they might be exposed and the proper precautions to take to reduce or avoid exposure.

TRAINING

All employees who work with or may potentially be exposed to hazardous chemicals will receive initial training on the Hazardous Communication Standard and the safe use of those chemicals by the job supervisor.

Whenever a new hazardous chemical is introduced, additional training will be provided. Initial information will be reviewed on a regular basis in the company's training sessions. Supervisors and foremen will be further informed and provided with hazard information so they can more effectively monitor the job area and answer employee questions.

MULTI-EMPLOYER SITES

The on-site supervisor will provide sub-contractors or other contractors working in the same general area with all the SDS sheets and provide data concerning the labeling system utilized. The protective measures required during normal working or emergency condition will be reviewed.

Specific responsibilities are;

1. Review scientific evidence concerning the chemicals they handle and conduct quality hazard evaluations
2. Develop accurate and detailed SDS.
3. Provide SDS's to the end user.
4. Provide appropriate container labeling.
5. Supply "Trade Secret" information to the medical people when emergency medical attention requires it.

HAZARD DETERMINATION-PURCHASED CHEMICALS

Our company will rely on the chemical or product manufacturer to perform a complete and accurate hazard determination. If there is any question about hazard determination on an SDS the manufacturer will be contacted immediately.

EMPLOYEE'S RIGHTS AND RESPONSIBILITIES

It is the right of every employee to be made aware of the hazards of any chemical they work with.

Specific rights of an employee are;

1. Be provided with accurate and meaningful hazard information and training for routine and non-routine tasks.
2. Be provided with access to SDS files.
3. Be provided with access to the written hazardous communication program.

Other employee rights that apply are;

4. Employee may refuse to work with a substance on the Toxic Substance List if the employer has not supplied a MSDS after the employee requested it in writing, and if the employer has not made a good faith effort within a time limit to get the SDS from the supplier or manufacturer.
5. Employees may not be discharged or otherwise disciplined or discriminated against in any manner by an employer for exercising their rights under the law.
6. Employees may file a complaint with the Department of Labor.
7. Employees may petition the Department of Labor to make additions to the Toxic Substance List. The Department of Labor will consider any such requests at a public hearing.

With these rights, however, comes the employee's responsibility to protect themselves by learning and understanding the hazards of the chemicals they work with.

Specific areas of responsibility are;

1. Active participation in training sessions.
2. Reviewing SDS's and container labels when questions arise regarding potentially hazardous chemicals during routine and non-routine tasks
3. Asking the supervisor questions when available information is not clear.
4. Following procedures set forth by SDS's.
5. Following specific safety procedures set forth by job site supervisor.

MANUFACTURER, SUPPLIER AND IMPORTER

It is the manufacturer's, supplier's and importer's responsibility to provide quality health hazard information to the end user.

ACCESS TO INFORMATION

All employees shall have access to information about chemicals to which they are exposed, or which they have indicated a desire to learn about. Every job site is to have SDS of products used on that site plus information from the client on any chemical (s) in our work area.

RIGHTS AND RESPONSIBILITIES

A. Background

Hazardous chemicals, hazardous materials or hazardous substances, as they are variously called, have long been used for many purposes in home, business, and industry. Often, people are aware of the specific hazardous properties, and what must be done to protect themselves from illness or injury these chemicals might cause. We commonly think of hazardous things as capable of causing serious harm, but that simply is not so. Many things the Hazardous Communication Standard defines as hazardous can only cause slight harm or irritation, with proper precaution, even that is unlikely. The hazardous Communication Standard removes as much as possible the mystery surrounding the risks due to receiving this information, the employer must obtain and provide it. At the same time, the employee has responsibilities which are specified by the OSHA guideline.

B. Group Responsibility

Establish and maintain SDS files that are readily accessible to each job site.

Establish and maintain a written hazard communication program that is easily understood and available to all employees.

Establish and maintain an information and training program for routine and non-routine tasks.

Establish and maintain a system of obtaining information from clients on any potentially hazardous chemicals that employees may come in contact with.

HAZARD AWARENESS TRAINING PROGRAM

PURPOSE AND SCOPE

The purpose of this Hazard Awareness Training Program is to ensure that all employees who might be exposed to hazardous chemicals in the workplace are informed of these hazards and what protection is needed to avoid overexposure. This program is a comprehensive guideline that includes;

- A. Container labeling
- B. Other forms of warning
- C. Safety Data Sheets (SDS)
- D. Employee training requirements

Successful implementation of this program will reduce unnecessary exposure to chemical hazards. A better informed employee is a safe employee. We also intend to improve the chemical policy of the company. There is no excuse for ignoring the safety requirements of chemical spill/waste disposal guidelines specified for hazardous materials and chemicals. Each of us is required to read and understand all information available about any chemical we handle, and follow the information strictly. This manual should help in doing this.

ADMINISTRATION

The site supervisor shall be responsible for obtaining and updating any SDS and also information from clients on any chemical substance that employees could be exposed to on the client's property.

TRAINING

The President or his designee, shall oversee the program. This includes;

1. Designating person responsible for training
2. Format and content of training
3. Procedure to be followed for training new or transferred employees.
4. Procedure to be followed when a new hazard is brought into the workplace.

“RIGHT TO KNOW OVERVIEW”

The OSHA Hazard Communication Regulation 29CFR 1910.1200 requires that all employees provide their employees and contractors with information on the Hazardous Communication Regulation, the company’s program and the rights of the employees under law.

The purpose of this overview is to provide that information to you and to advise you of where you may obtain additional information.

1. The primary requirement, under the law, is the copulation and implementation of a plan to protect employees from the dangers associated with presence and the use of hazardous materials found in the workplace. Copies of this plan, “Hazard Communication Plan”, are available from your superintendent.
2. Per the requirements of the plan, a list of all hazardous materials at this site has been compiled by your superintendent. This list will be updated periodically, as required per the terms of the plan.
3. The regulation requires that a “Material Safety Data Sheet” be maintained on file for each hazardous material which might be found in the workplace, and that each employee be trained in the proper use of that material, if his duties will bring him into contact with same.

Each employee will be trained in the proper use and handling of the materials with which they are likely to come into contact. If you would like copies of the Material Safety Data Sheet or if you have not had training, it is your responsibility to notify your immediate supervisor of this fact and to receive that required information and training prior to using this material.

4. It is your right under the law;
 - A. To receive all information regarding hazardous material to which you are exposed.
 - B. For your physician to receive information regarding hazardous material to which you are exposed.
 - C. To be protected against discharge or other discrimination due to your exercise of rights under the regulation.

THIS HAZ-COM POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94		√	DAVID S. OVERLY
1/18/96		√	DSO
10/11/96		√	DSO
11/3/97	√		DSO
1/21/98	√		DSO
2/2/99	√		DSO
8/13/99	√		DSO
10/16/00		√	DSO
05/10/01		√	DSO
01/21/02	√		DSO
08/28/02		√	DSO
01/28/04		√	DSO
10/20/04	√		DSO
11/20/05		√	DSO
06/20/06		√	DSO
03/18/09	√		DSO
04/27/10	√		DSO
12/01/13		√	DSO
06/14/16	√		DSO

EMERGENCY EVACUATION PLAN

When any employee begins work at a new location, he must make himself familiar with the location of all exits and emergency escape routes. He must also be familiar with the type of emergency alarm system in place as well as the location of phones and emergency phone numbers, fire extinguishers, and first aid kits, on site.

IN THE EVENT OF A FIRE OR OTHER EMERGENCY

1. Proceed to the nearest safe exit.
2. You are to gather at a predetermined location. This location will be determined by your foreman. An alternate location must be determined if the primary location is deemed unsafe. Once you have arrived at your gathering place, your foreman will account for all of his crew members. All subcontractor foremen must account for their crew members.
3. One person will be designated to summon emergency personnel.
4. If first aid certified employees are available, they will assist as necessary.

The alarm system in use at the shop will be the voice paging system. Anyone noticing an emergency such as a fire or explosion shall announce over the voice paging system that there is an emergency and the building will be evacuated immediately.

When working at different jobsites every employee will become familiar with the nature of and the operation of any existing alarm systems. For jobsites with 10 or fewer employees, direct voice communication is acceptable.

THIS EVACUATION POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>NAME</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94		√		DAVID S. OVERLY
1/18/96		√		DSO
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1/21/98		√		DSO
11/3/99		√		DSO
10/16/00			√	DSO
01/21/02		√		DSO
01/28/04		√		DSO
10/20/04		√		DSO
11/20/05			√	DSO
03/18/09		√		DSO
04/27/12			√	DSO
03/18/16		√		DSO

OSHA INSPECTION

Nobody wants an OSHA inspector knocking on their door, but if it happens you should know what to expect and what you should do.

When the OSHA inspector shows up, he or she should show the proper credentials, or you should ask to see them. The inspector should explain why he is there or ask him.

Common reasons for a visit are;

1. complaint from a worker-inspector may only inspect for that specific complaint
2. a referral from another agency
3. a programmed OSHA inspection
4. a programmed inspection for lead

The latter two are luck of the draw, not the result of a perceived problem on the site. If possible, don't let the inspector on site unless you have management present in a reasonable amount of time. If he is refused access to the worksite he can get search warrant and he'll probably be mad when he returns. When he does come on site stay with him. Take notes of everything he does, looks at, he photographs. If you have a camera take the same pictures he does. He will ask to see your records (haz-com, OSHA 300 log etc.). During the inspection there may be interviews with employees, they should be kept short. After the inspection there should be a short conference when the inspector will tell you what he has found. OSHA has 6 months to issue a citation.

Employers have 15 days to contest it. Don't offer the inspector any extra information. If he asks a question you can answer, go ahead and answer, if you are not sure just say you don't know. **DO NOT LIE!** If you are caught lying to OSHA **you** could be fined \$10,000 and spend 6 months in a federal prison.

What Rights Do You Have Under OSHA?

- ▶ You have the right to:
 - A safe and healthful workplace
 - Know about hazardous chemicals
 - Information about injuries and illnesses in your workplace
 - Complain or request hazard correction from employer
 - Training
 - Hazard exposure and medical records
 - File a complaint with OSHA
 - Participate in an OSHA inspection
 - Be free from retaliation for exercising safety and health rights

THIS OSHA POLICY WAS REVIEWED AND/OR REVISED

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
1/6/95	√		DSO
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10/16/00	√		DSO
05/10/01		√	DSO
08/28/02		√	DSO
10/20/04	√		DSO
11/20/05		√	DSO
03/18/09	√		DSO
04/27/10	√		DSO
10/18/11		√	DSO
06/14/16	√		DSO

FORK TRUCK POLICY

Ingle-Barr Inc. considers safety a necessary and integral part of its business. No job is so important or so unimportant that it cannot be done safely. Since lift trucks are a part of our operations and since they can be a source of serious injury and costly damage, we are giving special attention to their safe operations.

A training program is being set up to be sure all fork truck operators, new and experienced, have a uniform understanding of safe and efficient operations and know the safety rules. Our supervisors will make every effort to insure the safe driving practices brought out in this course are observed. We shall also do everything necessary to maintain our trucks and facilities in the safest condition and expect everyone to cooperate in keeping them that way. By matching safe driving and safe equipment, we should keep truck accidents and injuries to a minimum. We want to do everything we can to prevent all of our employees from getting hurt.

Those who successfully complete the course will have taken an important step toward becoming professional drivers. Because they have received this special training we shall expect them to so their part in operating their trucks in the safest and most efficient manner.

FORK TRUCK CHARACTERISTICS

General Characteristics

1. The operator is seated and faces forward.
2. Travel controls vary among models; consult the owner's manual.
3. Drive power is provided by the front wheels.
4. Steering is provided by means of rear wheels for greater maneuverability. Power steering is common.
5. This truck travels equally well in forward or reverse and should be driven in the direction of greatest visibility.
6. Power is supplied by gasoline, LPG, or diesel fuel.
7. Material is carried by forks (or attachments) mounted on hydraulically operated vertical mast at the front.
8. Material travels vertically on the mast (which may also be tilted forward or backward).
9. These trucks are designed to meet the requirements of ANSI/ASME B56.1 Safety Standard for Low Lift and High Lift Trucks.

APPLICATIONS:

1. Surface- These trucks are intended for use on smooth, hard floors, such as concrete. Maximum grade for safe operation is approximately 20 percent.
2. Typical Operating Environment
 - i) wet or dry conditions
 - ii) this truck may be used in fire-hazardous areas with appropriate UL/NFPA rating
 - iii) a ventilated atmosphere is required due to depletion of oxygen and combustible products in exhaust.
3. Loads- Stable, utilized loads up to specified capacity that are interlocked, shrink packed or banded can be lifted on skids, pallets, or with attachments.
4. Attachments- Trucks can be fitted with almost any type attachment to handle specialized loads.

PRINCIPALS OF OPERATION:

1. Truck stability- Four wheel trucks with widely spaced rear wheels are attached to a rear axle which pivots at its center. This arrangement allows the rear wheels to adjust to rest solidly on an uneven floor. The rear of the truck is supported at this center pivot of the axle, resulting in the three point suspension.
2. Location of steering and driving wheels- Driving wheels are at the front and act as a fulcrum to counterbalance the load. Steering wheels are at the rear for increased maneuverability. Power steering is common. Utilizing these features requires operator awareness and practice.
3. Braking
 - i) Service brakes usually operate on the front drive wheels, and are usually of hydraulic shoe and drum type.
 - ii) Parking brakes operate on the front drive wheels, usually requiring mechanical operation of the service brakes.
4. Power Source- Internal combustion engines fueled by gasoline, LPG, or diesel provide power. The engine powers the drive wheels through a transmission, differential and drive axle, or through hydraulic pump and motors.
5. Load Manipulation- With a standard mast and forks the load can be lifted and tilted. Attachments can provide for rotating, side shifting, clamping or otherwise hauling the load. The load is usually carried by the lift truck attachment.
6. Operator controls consist of:
 - i) steering wheel
 - ii) key switch
 - iii) service brake pedal
 - iv) parking brake lever
 - v) accelerator pedal
 - vi) direction selector or clutch
 - vii) horn
7. Instruments consist of:
 - i) hour meter
 - ii) ammeter
 - iii) fuel gauge
 - iv) engine temperature gauge
 - v) engine oil pressure indicator

SAFETY RULES

I. Operations- Only trained and authorized employees shall be permitted to operate a powered fork truck. Training shall consist of basic classroom type coverage of general safety rules by the Safety Director and on-the-job operating instruction, on each type of unit, by production supervision.

II. Truck Operation- If at any time a fork truck is found to be in need of repair, defective, or in any way unsafe report the problem to your supervisor.

A. Inspection items:

1. check tires for cuts, gouges, imbedded objects
2. check steering for excessive play
3. foot brake and emergency brake
4. hydraulic fluid
5. controls for proper operation
6. horn
7. chains for excessive wear and proper operation
8. mast, carriage and attachments for damaged, loose or missing bolts; unusual wear on chain guides or insides of mast channels
9. check condition of slides and latches for adjusting fork width
10. name plate and markings (load limits)
11. operating lights
12. guards
13. fuel lines
14. back-up alarm
15. coolant level
16. engine oil
17. seat belt

B. RULES

1. Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
2. No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
3. Unauthorized personnel shall not be permitted to ride on power industrial trucks.
4. Hands, arms, feet, legs and head shall at no time be placed between the upright of the mast or outside the running line of the truck.
5. Unattended trucks-
 - a. When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
 - b. A fork truck is unattended when the operator is 25 feet or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.

- c. When the operator of a fork truck is dismounted and within 25 feet of the truck still in his view, load engaging means shall be fully lowered, controls neutralized and the brakes set to prevent movement.
6. A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform, or freight car.
7. Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the tractor is not coupled to the trailer. The flooring of the trucks, trailers and railroad cars shall be checked for breaks and weakness before they are driven onto.
8. There shall be sufficient headroom under overhead installations, lights, sprinkler lines, etc.
9. An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, and bagged material etc., but not to withstand the impact of a falling capacity load.
10. A load backrest extension shall be used whenever necessary to minimize the possibility of a load or part of it from falling rearward.
11. Only approved industrial trucks shall be used in hazardous locations.
12. Fire aisles, access to stairways, and fire equipment shall be kept clear.

III. TRAVELING

- A. All traffic regulations shall be observed, including authorized speed limit of 5 mph. A safe distance shall be maintained approximately three truck length from the truck ahead, and the truck shall be kept under control at all times .
- B. The right of way shall be yielded to ambulance, fire trucks, or vehicles in emergency situations.
- C. Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- D. The driver shall slow down and sound the horn at cross aisles and other locations where vision

THIS FORK TRUCK POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94	√		DAVID S. OVERLY
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9/9/96		√	DSO
11/3/97	√		DSO
1/21/98	√		DSO
10/12/99		√	DSO
10/16/00		√	DSO
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01/21/02	√		DSO
01/28/04	√		DSO
10/20/04	√		DSO
11/20/05		√	DSO
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03/18/09	√		DSO
10/20/04	√		DSO
01/07/16	√		DSO

SKID LOADER TRAINING

For safe operation of this machine, you must be a qualified and authorized operator. To be qualified, you must understand the written instructions in the owner's manual, have training including actual operating experience and know the safety rules.

This Bobcat Skid Loader is Model S-300 Turbo, it is powered by a 4-cylinder turbo charged diesel engine with 202.5cu. in. and 77.7 horsepower at 2400 rpm. It holds 12 quarts of 10w-30 motor, 25 gallons of fuel and 13 gallons of hydraulic fluid. The hydraulics are powered by a gear driven pump and the fluid is under 3000 psi (easily enough to cut flesh). The lift arm cylinders are double acting, cycling time is 4.4 seconds to raise and 3.2 seconds to lower. The bucket cylinders are also double acting, dump cycle is 2.5 seconds and curl is 1.9 seconds. The top speed of this loader is 7.2 mph. The machine weighs 5448 pounds and can safely lift 3000 pounds. It is 72" wide, 81" tall, and 143" long with the bucket attached. It has a turning radius of 84.2. The maximum operating height is 160" and minimum ground clearance is 8.5". This information is given to you to familiarize you with simple maintenance, speed of operations, weights, and dimensions to prevent accidents and to give you knowledge about where you can and can't operate this loader.

These loaders are to have grease points, engine oil, hydraulic oil, and coolant levels checked every day before use.

GENERAL SAFETY RULES

1. Give complete attention to the job so the loader is under control at all times.
2. Drive slowly over rough terrain and slopes, watch for holes, ditches etc. that may cause the loader to overturn.
3. Avoid steep hillside operation.
4. Never transport a loaded bucket at full height. Always travel with load as low as possible.
5. Reduce speed when turning.
6. Never drive up or back up a hill with a load raised.
7. Always look behind you before backing.
8. Check and maintain fluid levels.
9. Do not carry passengers.
10. Do not allow anyone to operate the loader without proper instruction.
11. Operate the loader only from the operator's seat.
12. Before starting the loader, be sure the controls are neutralized and the parking brake is set.
13. If operating within an enclosed area, use adequate ventilation.
14. Refuel outdoors with engine off (no smoking).
15. Be careful of loose clothes and long hair.
16. Before servicing the loader or attachments, be sure they are lowered to the ground or the boom is supported by its pins.
17. Do not work under overhangs, electrical wires, or where there is danger of a slide.
18. Wear the appropriate safety equipment (hard hat, ear plugs, and shoes).
19. When driving on public roads obey traffic laws and use lights.
20. Keep the loader clean.
21. Do not remove any shields, windows, or screens when operating.
22. Never extend body parts outside operators cab during use.
23. Make sure bystanders are clear before operating.
24. Do not use the skid loader as a work platform, or raise personnel. This is not a manlift.

OPERATING CONTROLS

Display panel- right side panel is the keyless Panel, the left panel shows setup, monitoring, Trouble shooting and error messages.

Hydrostatic controls - move the loader forward, backward, and turn left or right

Seat Belts, and seat bar

Seat Adjustment lever - under the seat on the left.

Lift Arm Bypass Control – red knob on right side next to seat

Boom Foot Control - floor left foot

Bucket Foot Control - floor right foot

Parking Brake Lever – red switch on overhead console, center

Throttle Control – right side

Emergency Exit - rear glass

PRESTARTING CHECKLIST

BEFORE OPERATING EACH DAY, CHECK THE FOLLOWING

1. Check fuel
2. Check air filter
3. Remove dirt and debris from foot controls
4. Check radiator and oil cooler
5. Check engine oil, hydraulic fluid, and coolant
6. Look the loader over for leaks, broken or loose parts, do not operate a loader that is broken or unsafe
7. Check seat belt and seat switch
8. Check parking brake
9. Check attachment to insure it is secure
10. Grease fittings as required

Before entering or exiting the loader - make sure the boom and attachments are lowered to the ground or the boom arms are supported by the support bars. Enter from the front by using the boom step and grab handle or from the front via the bucket step. When stepping into the cab, place your foot on the step between the petals. Before exiting, lower the boom and attachments to the ground (or lock the boom up with the support), engage the parking brake, stop the engine, remove seat belt, lift seat bar and exit the same ways as you entered.

STARTING THE ENGINE

1. Adjust the seat
2. Fasten the seat belt, lower the seat bar
3. Neutralize the controls
4. Set the parking brake
5. Move throttle to 1/3
6. Use the keypad to enter password and press RUN/ENTER
7. When the intake heater light goes off press START and release when loader starts
8. Observe all indicator lights
9. Allow engine & hydrostatic system to warm before applying a load (10 min. if below freezing)
10. Adjust throttle
11. Press the PRESS TO OPERATE LOADER button
12. Release parking brake
13. Look around for hazards and people

STOPPING THE LOADER

1. Return drive controls to neutral
2. Throttle to 1/2
3. Lower the boom and bucket
4. Throttle to idle
5. Set brake
6. Press the STOP button

BOOM

The boom is controlled by the left foot pedal located on the floor. The boom is raised by depressing on the heel, and the boom is lowered by press on the toe of the foot pedal. The boom has a float feature, which allows the boom to float over changing terrain or to use when grading. Depress the toe of the boom until a slight jump is felt. Now the boom will float. To return to normal operation, apply pressure to the heel of the boom pedal.

BUCKET

The bucket is controlled by the right foot pedal on the floor. To dump, depress the toe of the pedal. To curl, depress on the heel of the pedal. The bucket is equipped with a BUCKET POSITIONING BUTTON that holds the bucket in a level position while raising the lift arms. The loader is equipped with POWER BOB-TACH option. Press BOB-TACH button up to release wedges and remove attachment, reverse to attach.

DRIVE CONTROLS

The drive controls are located at the operator's knees. They control their own side independently, that is the right control operates the right and left control operates the left wheels. If both handles are moved equally in the same direction, the loader will move in a straight line. If only one handle is moved, the wheels on that side of the loader will move and the loader will turn. If the handles are moved in opposite directions, the loader will pivot. The speed of motion is always directly related to the distance away from neutral each handle is moved. If both handles are pushed forward, the operator can release one and the loader will continue in a straight line.

OPERATION

1. Avoid steep hillside operation
2. Keep the boom as low as possible while operating
3. Reduce speed when turning and avoid abrupt starts and stops
4. Before dismounting from the loader;
 - a. move the control levers to the neutral position
 - b. lower the boom or engage boom pins
 - c. engage parking brake
 - d. shut off engine
 - e. unbuckle seat belt, raise seat bar
5. Be careful when getting out
6. Always use the seat belt and seat bar when operating the loader
7. When parking the loader on any slope, engage the parking brake and chock the wheels
8. Keep all body parts inside the cab
9. Keep all shields and guards in place

This loader is very stable, but it can be overturned if stopped suddenly when the bucket is raised and loaded. If the loader should start to tip forward with the boom raised, immediately lower the boom to regain stability. If the engine pulls down as the loader is engaging a load, it is because the levers are too far forward. Maximum torque is obtained at minimum ground speed.

Digging - when digging with the loader, remove a thin layer with each pass, it is more efficient and reduces wheel slippage.

Ingle-Barr Inc. Safety

Transporting - when backing out and transporting a load, carry the bucket just high enough to clear obstacles in the loader's path. Raising the bucket higher than necessary reduces stability. Never transport a loaded bucket at full height. Always look behind you before backing. Know where wires are located and stay away.

THIS SKID LOADER POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94	√		DAVID S. OVERLY
1/18/96	√		DSO
9/9/96	√		DSO
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1/21/98	√		DSO
10/12/99	√		DSO
10/16/00	√		DSO
08/28/02	√		DSO
08/28/04	√		DSO
11/20/05		√	DSO
03/18/09	√		DSO
07/26/11		√	DSO
12/20/14		√	DSO
06/14/16	√		DSO

LOCKOUT/TAGOUT POLICY

Lockout/Tagout procedures are for your safety. They are designed to prevent accidents and injuries caused by the accidental release of energy. These procedures prevent workers from accidentally being exposed to injurious and even life threatening situations with energized machinery.

Where Are The Regulations?

The Occupational Safety and Health Administration regulates lockout/tagout through the control of hazardous energy standard, found at 29 CFR 1910.147. This standard mandates training, audits, and recordkeeping to ensure that workers will not be unintentionally injured by unintentionally energized equipment.

Enforcement

Any employee who fails to follow these procedures will face disciplinary action in accordance with those listed in the company handbook. (1st violation-written warning, 2nd violation-3 days off, 3rd violation-termination)

What Is Lockout/Tagout

Lockout is the process of blocking the flow of energy from a power source to a piece of equipment, and keeping it blocked out. Lockout is accomplished by installing a lockout device at the power source so that equipment powered by that source cannot be operated. A lockout device is a lock, block, or chain that keeps a switch, valve, or lever in the off position. Locks are provided by the employer and can be used only for lockout purposes. They should never be used to lock tool boxes, storage sheds, or other devices.

Tagout is accomplished by placing a tag on the power source. The tag acts as a warning not to restore energy-it is not a physical restraint. Tags must clearly state: **Do Not Operate** or the like, and must be applied by hand. Both locks and tags must be strong enough to prevent unauthorized removal and to withstand various environmental conditions.

What Must Be Locked or Tagged Out

The control of hazardous energy standard (lockout/tagout), covers servicing and maintenance of equipment where unexpected energization or start-up of equipment could harm employees. You need to control energy before working in situations involving repair and replacement work, renovation work, and modifications or other adjustments to power equipment. There may be other instances as well when lockout/tagout is required at your facility. In general, the OSHA standard required that all power sources that can be locked out, must be locked out for servicing or maintenance. Remember, guards or interlock devices cannot be used as substitutes for locks during major servicing. The standard requires that employers develop written energy control programs that clearly and specifically explains all procedures for lockout/tagout. These plans must include:

- ◆ The intended use of the procedure.
- ◆ How to shut down, isolate, remove, block, and secure machines or equipment to control hazardous energy.
- ◆ Sequence to place, remove, and transfer lockout or tagout devices and who is responsible for them.
- ◆ Steps to test a machine or equipment to make sure it is locked or tagged out.

Your employer must also train the workers affected by these procedures.

Employers must identify and differentiate between authorized and affected employees. **Authorized employees** physically lock or tag out equipment for servicing or maintenance. Note that these individuals are not necessarily the people who normally operate the equipment. **Affected employees** are those workers whose job requires them to operate equipment subject to lockout/tagout, or those employees who work in areas where lockout/tagout is used. Your employer will inform you if you are an affected employee.

Controlling Energy Sources

A wide variety of energy sources require lockout/tagout to protect you from the release of hazardous energy. Some of these energy sources include:

- ◆ electrical
- ◆ mechanical
- ◆ pneumatic (gases)
- ◆ hydraulic (fluids)
- ◆ chemical
- ◆ thermal
- ◆ water under pressure (steam)
- ◆ gravity
- ◆ potential

Lockout/tagout must be used to protect you from the potentially dangerous effects of hazardous energy. Some of the problems of hazardous energy include:

- ◆ accidental start-ups
- ◆ electric shock
- ◆ release of stored, residential, or potential energy

Remember, these accidents often occur when someone takes a short cut when servicing machinery, or they occur when a worker doesn't understand the equipment or job to be done.

The Lockout/Tagout Procedure

This lockout/tagout procedure covers the following

- ◆ how to perform a shutdown
- ◆ how to isolate equipment
- ◆ how to apply and remove lockout devices
- ◆ how to safely release stored energy to assure that a zero energy state exists

How to perform a shutdown and isolate equipment-First, notify all affected employee that you're about to start a lockout procedure. Then locate all energy sources that power the piece of equipment you'll be servicing. Always look for hidden energy sources. Some machines may have more than the machine and all power sources involved.

Applying and removing lockout devices-Every power source has its own procedure for lockout. Lockout may be accomplished by pulling a plug, opening a disconnect switch, removing a fuse, closing a valve, bleeding the line, or placing a block in the equipment. Generally, follow this sequence of events:

- ◆ Shut down the machine by following the normal method for shutdown
- ◆ Turn off the energy at the main power source
- ◆ turn the machine switch back to confirm that the power has been deactivated
- ◆ attempt to restart the machine to guarantee that the power is shut off, then return the switch to the off position
- ◆ using your designated lock, lock out all energy sources involved
- ◆ with your lock in place, test the disconnect to make sure it can't be turned on

Make absolutely sure the power can't be supplied unless you know about it. If several people are needed to work on a piece of equipment, each one must apply their own lock. This prevents any accidental start-ups while another employee may still be working on the machinery. In this case, you'll use a multiple lockout

device that can accommodate several locks at once. When all energy sources are locked, inform others of the lockout situation. One way to do this is by applying a tag to the power source. **NEVER USE ANOTHER EMPLOYEE'S LOCK AND NEVER LEND YOURS.** This protects you and your fellow workers.

Safe release of stored energy-Equipment must be at "zero energy state" before servicing or maintenance work can begin. To get to this zero energy state:

- drain all valve, bleed all air from a system, eliminate stored hydraulic pressure, or use any method to release energy that is detailed in the company procedure.
- test the machine to make sure that all energy was disconnected or released

Putting The Power Back On

After servicing is finished, make sure all tools are removed from the area and replace all machine guards. Only then can you remove your tag and lock and reconnect all sources of energy. After this, you may restart the equipment.

Following Training and Audit Requirements

OSHA requires that:

- ◆ All authorized employees be trained in recognition of hazardous energy sources, hazardous energy sources in use at this facility, and how to perform the lockout/tagout procedure.
- ◆ all affected employees must be instructed on the purpose and use of lockout/tagout.
- ◆ All other employees must be instructed in the purpose of the plan, but not in the actual use.
- ◆ Retraining be done when there are changes in equipment, job assignment, or procedures, when an audit shows deficiencies with the procedure, and when the employee feels the procedures should be reviewed.

The OSHA standard also calls for periodic inspections or audits. All audits must be done by an authorized employee who does not use the energy control procedure being inspected. Audits must be done at least annually, and should include questions to determine if employees understand the purpose of lockout/tagout, if proper locks and tags are being used, and if established procedures are being followed. Each audit must be documented.

Other Concerns

Other concerns that must be addressed for your company's lockout/tagout program include working with outside contractors, shift and personnel changes, and power sources that cannot be locked out.

Outside contractors-must be informed of your lockout/tagout procedure in full detail, so that their employees understand the meaning of locks or tags that they may come across during the course of their work. In addition, if contractors will be using locks or tags, they should inform your company, so that everyone affected may be notified.

Shift and personnel changes-in general, if a piece of equipment is locked out at shift change, the person on the next shift must apply his lock before the employee who is leaving can remove his.

Power sources that cannot be locked out-in very rare cases, a power source cannot be physically locked out. Discuss this situation with your supervisor, to find out if tagout alone may safely be used. There are few situations where tagout alone is allowed.

Work AT Working Safely

Your attention to and respect for your company's lockout/tagout program will make the workplace safer for both you and your co-workers. Always follow lockout/tagout procedure during servicing or maintenance of equipment, where unexpected energization or start-up of the equipment could harm you or a fellow employee.

1. Always lock and tag out power sources and switches when you service or repair electrically energized equipment
2. Never ignore or remove the locks or tags of other employees when you come across them in the workplace.
3. Know your role as an authorized or affected employee.

ELECTRICAL SAFETY

Electricity has long been recognized as a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires and explosions.

Experts in electrical safety have traditionally looked toward the widely used NEC for help in practical safeguarding of persons from these hazards. OSHA has also recognized the importance of the NEC in defining basic requirements for safety in electrical installations. In 1971 they included the entire NEC into the OSHA 1926 standard by reference. In 1986 they sat down and picked out the items from the NEC that they wanted and left the others out, thus making the document simpler and easier to read and understand.

The first couple of paragraphs of the standard say:

1. all electrical conductors and equipment shall be approved.
All electrical equipment must be inspected to insure it is free from recognized hazards that are likely to cause death or serious injury. Safety of the equipment will be determined by the following:
 - a.) suitable equipment for the application
 - b.) mechanical strength and durability
 - c.) electrical insulation
 - d.) heating effects under use
 - e.) arcing effects
 - f.) classification by type, voltage, current capacity and specific use
 - g.) other factor that contribute to the practical safeguarding of employee who use or are likely to come into contact
2. Guarding-live parts of electrical equipment operating at 50 volts or more must be guarded against accidental contact by one of the following methods
 - a.) located in a cabinet, room, vault, or similar enclosure accessible only to qualified persons.
 - b.) use of permanent, substantial partitions or screens to exclude unqualified persons.
 - c.) located on a suitable balcony, gallery, or platform elevated and arranged to exclude unqualified persons.
 - d.) elevation of eight feet or more above the floor.

Entrance to rooms and other guarded locations must be marked with warning signs forbidding unqualified persons from entering, plus equipment must be marked w/appropriate caution signs.

Electric installations that are over 600 volts and that are open to unqualified persons must be made with metal-enclosed equipment or vault or area controlled by a lock, and be marked w/signs.

3. Conductors must be protected by from overcurrent in accordance with their ability to safely conduct current and be sized to handle the current. Fuses and circuit breakers must also be located or shielded that employees not be burned or otherwise injured by their operation e.g. arcing
4. Grounding of equipment connected by cord and plug-exposed noncurrent-carrying metal parts of cord and plug connected equipment that may be energized must be grounded.
 - a.) when in a hazardous location
 - b.) when operated at 150 volts to ground (except for guarded motors and metal frames of electrically heated appliances).
 - c.) when one of the following types of equipment is used
 - 1.) hand held motor-operated tools
 - 2.) cord and plug connected equipment used in damp or wet locations or by employees standing on the ground or on metal floors or working inside metal tanks or boilers.
 - 3.) tools likely to be used in wet and or conductive locations
 - 4.) portable hand lamps

Exception - tools that are double insulated, but they must be marked they are dbl. insulated.

If installation of electrical equipment (lighting, power, etc.) is made in accordance with the NEC it will be considered to be in compliance with the OSHA standard for: ground fault protection, protection of lamps on temporary wiring, suspension of temporary lights by cords, extension cord set and flexible cords.

Protection of Employees

The employee is not permitted to work near any part of an electric power circuit that the employee could contact in the course of work, unless the employee is protected against shock by de-energizing the circuit and grounding it by or guarding it effectively by insulation or other means.

Where the location of underground electric power lines is unknown, employees using jackhammers or hand tools that may contact a line must be provided with insulated protective gloves. Before work is begun it must be determined by inquiry (call OUPS), observation, or the use of instrumentation where the underground utility is located. The employee needs to know the location of such utilities, the hazards involved, and the means of protection needed.

Lock/out and tag/out

Must be used when doing maintenance on circuits and equipment.

GROUND-FAULT PROTECTION ON CONSTRUCTION SITES

INSULATION AND GROUNDING

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor. Grounding may be achieved through the use of a direct connection to a known ground such as a metal cold water pipe.

Consider, for example, the metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring. However, there is a hazard associated with housings and enclosures. A malfunction within the equipment-such as deteriorated insulation-may create an electrical- shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard. If a "hot" wire contacts a grounded enclosure, a ground fault results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to g-round. This wire is called an equipment grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user's knowledge.

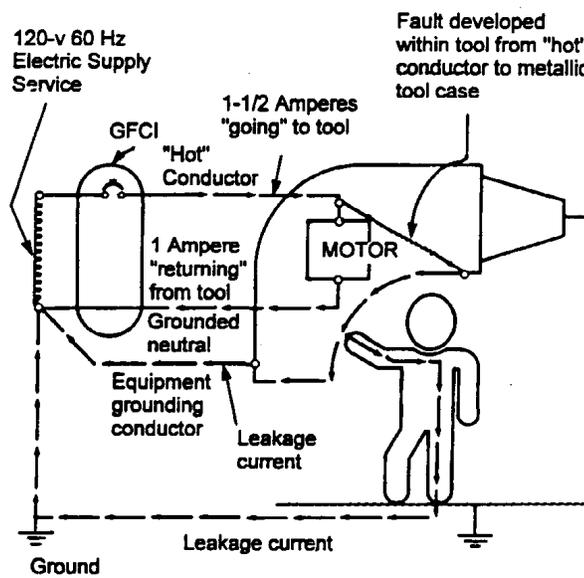
Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

The use of a ground-fault circuit interrupter (GFCI) is one method used to overcome grounding and insulation deficiencies.

WHAT IS A GFCI?

The ground-fault circuit interrupter (GFCI) is a fast-acting circuit breaker, which senses small imbalances in the GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second. (See diagram.)

Ground-Fault Circuit Interrupter



GFCI monitors the difference in current flowing into the "hot" and out to the grounded neutral conductors. The difference (1/2 ampere in this case) will flow back through any available path, such as the equipment grounding conductor, and through a person holding the tool, if the person is in contact with a grounded object.

THIS POLICY WAS REVIEWED AND/OR REVISED:

<u>DATE</u>	<u>NAME</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
5/12/94	LOCKOUT/TAGOUT	√		DAVID S. OVERLY
1/18/96			√	DSO
10/11/96		√		DSO
11/3/97		√		DSO
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08/28/02			√	DSO
01/28/04		√		DSO
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06/02/05			√	DSO
03/18/09		√		DSO
04/27/12			√	DSO
01/07/16		√		DSO

SCAFFOLD SAFETY

SCAFFOLD CONSTRUCTION

Scaffold over 125' high shall be designed by a registered professional engineer and built to that design.

The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose bricks, or concrete blocks shall not be used to support scaffold or planks. The poles, legs or uprights of scaffolds shall be plumb, and securely and rigidly braced and pinned to prevent uplift, swaying or displacement. Scaffold legs shall be set on adjustable bases or plain bases and secured to mud sills unless built on concrete.

Scaffold from different manufacturers shall not be intermixed unless the parts will connect without force, nor will they be altered to make them fit together.

Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced.

SCAFFOLD ERECTION AND DISMANTLING

No scaffold shall be erected, moved, dismantled or altered except under the supervision of competent persons. A competent person will determine whether it is feasible and safe to provide fall protection for assemblers/dismantlers.

Scaffolds shall not be erected or used in the immediate vicinity of power lines or electrical conductors until such are insulated, de-energized or otherwise rendered safe against accidental contact.

When scaffolds are being dismantled, the dismantling operation shall start at the top and work down. All disconnected members and connectors shall be lowered rather than dropped from the scaffold. The stability of the remaining assembled scaffold shall be maintained throughout the course of disassembly.

SCAFFOLD ACCESS

Workers are most vulnerable to fall hazards when climbing on or off a scaffold. Therefore, employers are required to provide safe scaffold access. Erectors and dismantlers face additional access problems due to the incomplete condition of the scaffolding. Requirements to prevent falls that apply only to these workers are addressed separately below.

An access ladder or equivalent safe access shall be provided, except during the erection or dismantling. Safe access is defined as one of the following;

1. Portable wood, metal, or fiberglass ladders
2. Scaffold frame when the maximum spacing between climbing surface of the frame does not exceed 16 1/2" and the length of the climbing surface shall not be less than 10".
3. Hook-on or attachable metal ladders.
4. Step or stair access form specifically designed for your scaffold.
5. Direct access to or from another surface is permitted only when the scaffold is not more than 14 inches

horizontally and not more than 24 inches vertically from the other surface. Ladders should be positioned so as not to tip the scaffold. Cross braces shall not be used as a means of access or egress.

SCAFFOLD GUARDRAILS

Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Scaffolds 4 to 10 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches shall have standard guardrails installed on all open sides and ends of the platform.

Guardrails shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor with the following exceptions;

1. During erection or dismantling
2. Scaffolding covering the entire floor area and not having any open sides or openings.

Guardrails; The top edge height of top rails on supported scaffolds must be between 38 inches and 45 inches. Supports shall be at intervals not to exceed 8 feet. Midrails, screens, mesh, intermediate vertical members, solid panels, etc., must be able to withstand a force of at least 150 pounds applied in any downward or horizontal direction, at any point along the midrail or other member. When midrails are used, they must be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

When screens and mesh are used, they must extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports. Toe boards shall be a minimum of 3 1/2 inches in height. Guardrails must be capable of withstanding a 200 pound force applied in any direction except upwards without failure. Cross bracing is acceptable in lieu of a midrail when the crossing point of the two braces is at least 20 inches, but not more than 30 inches above the platform. Cross bracing is acceptable as a guardrail system provided the crossing point is between 31 and 48 inches above the platform. Cross bracing cannot be used as both a top rail and a midrail. The endpoints at each upright shall be no more than 54 inches apart. Toeboards shall be required with guardrail systems on all open sides and ends of scaffolds at locations where persons are required to work or pass under the scaffold. Toeboards must be able to withstand 50 lbs. force downward and horizontally. Toeboards will have no more than 1" openings and a 1/4" gap between platform and toeboard. Guard rail systems shall not be required on the building side when the platform is less than 16 inches from the building.

PLANKING

All planking shall be scaffold grade, or the equivalent. The maximum permissible spans for 2 x 10 inch or wider planks;

	full thickness undressed lumber			nominal thickness lumber	
working load (psf)	25	50	75	25	50
permissible span	10'	8'	6'	8'	6'

Nominal thickness lumber is not recommended for heavy duty use.

1. Light duty (equivalent to one 250 pound person per plank)
 - painting window washing
 - cleaning light maintenance

2. Medium duty (equivalent to two 250 pound persons per plank)
 - brick laying equipment storage
 - drywalling

3. Heavy duty (equivalent to three 250 pound persons per plank)
 - stone setting heavy machinery
 - equipment storage

Each working level must be fully planked and at least 18" wide from front face to guardrail (exception- used only as a walkway or during erection and dismantling).

Each end of the platform must be cleated, hooked, or extend over the support centerline

Planks shall overlap a minimum of 12 inches except for platforms supplied with cleats or hooks. Overlap shall occur at supports and each unit shall extend a minimum of 6 inches over the support. At end supports, platform unit unless cleated or otherwise restrained by hooks or equivalent means at both ends, shall extend over the end support not less than 6 inches nor more that 18 inches. Platforms on all working surfaces on all scaffolds shall be fully planked or decked with platform units as follows;

1. platform units will be placed as close as possible to adjacent units (no more than 1" between units or the width of the uprights.
2. where full planking cannot be obtained using standard width units, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the guardrail supports shall not exceed 9 1/2".

Slippery conditions shall be removed from planks before working on them (ice, snow, grease, etc.)

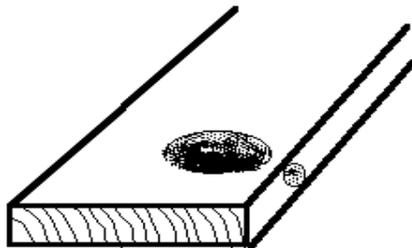
WORKING DISTANCE

For most activities, there must be no more than a 14-inch gap between the scaffold platform and the structure being worked on. For lathing and plastering, a gap of 18 inches is permitted

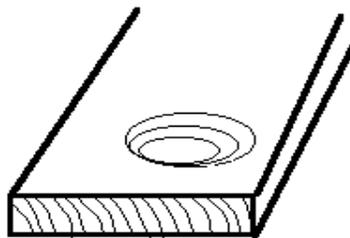
PLANK INSPECTION

Planks should be inspected before each use, lumber is subject to deterioration from weather, chemicals and loading.

1. Knots - a portion of a branch or limb that has been incorporated in a piece of lumber; a sound knot contains no decay, is firm and smooth, while an unsound knot contains decay, is not firm or smooth.



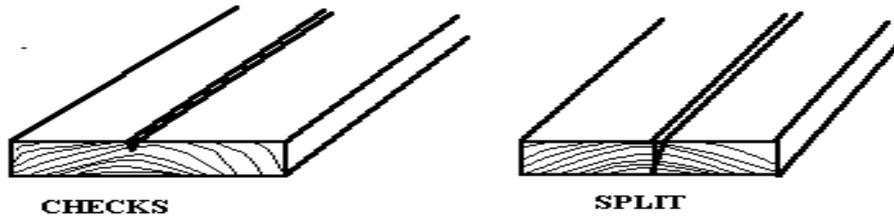
SOUND KNOTS



UNSAUND KNOTS

FACE WIDTH	KNOT SIZE
8"	1-1/2"
10"	2"
12"	2-1/2"

FACE WIDTH	KNOT SIZE
8"	1"
10"	1-1/2"
12"	1-1/2"



2. Checks - a separation of the wood normally occurring across or through the rings (usually a result of seasoning); a surface check occurs on one surface while a thorough check extends from one surface to the opposite surface.

3. Splits - a separation of the wood due to the tearing apart of the wood cells.

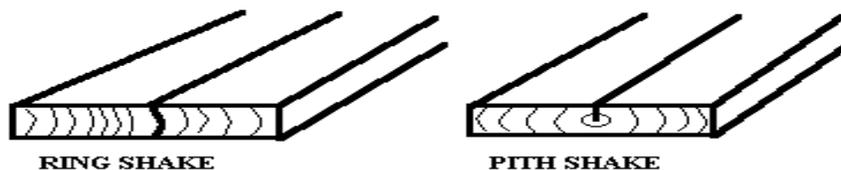
Scaffold plank splits are limited to the following lengths and widths.

Widths can equal 1/8"

6' and 8' planks may have 12" splits

10', 12', 14' and 16' planks may have 18" splits, but if there is an 18" split on one end there can only be a 9" split of the opposite end.

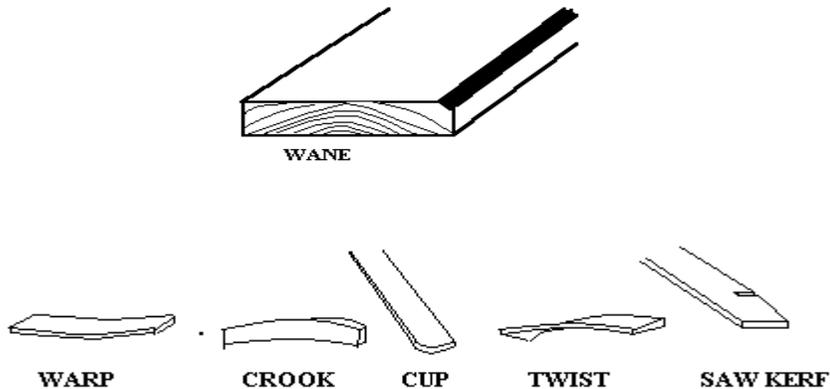
4. Shakes - a lengthwise separation of the wood between the rings, or through the pith; a surface shake occurs only on one surface, while a through shake extends from one surface to the other.



Surface shake - up to 2' in length

Through shake - on ends, equal in length to width away from ends, none through.

5. Wane - bark or lack of wood from any cause, except eased edges, on the edge or corner
1/4 the width, 1/4 the thickness but 5% may have wane 1/3 the width, 1/2 the thickness
for 1/4 the length.



LOADING

Scaffolds shall be capable of supporting, without failure, their own weight and at least four times the maximum intended load. They shall be designed and erected to safely support the design load.

TYING AND BRACING

Anchorage, guying, tying-off, or bracing of scaffolds shall be affixed to substantial and structurally sound structures or the equivalent. Tying the scaffold off will be done when there is the possibility of uplift, it shall also be secured with locking pins in the frame connectors. Tie your scaffold off when the height exceeds four times the minimum base dimension then every 26 feet vertically and 30 feet horizontally.

MANUALLY PROPELLED SCAFFOLDS

When free-standing mobile scaffolds are being used, the height shall not exceed four times the minimum base dimension. Outriggers may be included as part of the base dimension. Ohio Administrative Code says three times the base dimension.

Casters shall be designed to support four times the intended load, be 5” in diameter, and they will have locking devices.

The force necessary to move the scaffold shall be applied near or as close to the base as possible and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on surfaces free of obstacles and openings. The employer shall not allow employees to ride on scaffolds unless the following conditions exist:

1. the floor or surface is 3 degrees of level, and free from pits, holes, or obstructions
2. the minimum dimension of the scaffold base when ready to roll is at least 1/2 of the height
3. the wheels are equipped with rubber or similar resilient tires
4. all tools and materials are removed or secured from the platform before moving.

Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent movement.

PERSONAL PROTECTIVE EQUIPMENT

If you are over 6 feet above the ground or floor and you do not have a guardrail system on your scaffold, you will wear a safety harness and be tied off to a point that is capable of supporting 5000 pound weight.

LADDER SAFETY

WHEN LADDERS ARE REQUIRED OSHA 1926.1051;

Ladders or a stairway shall be provided at all points of access when there is a break in elevation of 19 inches or more and no ramp, runway, sloped embankment, or personnel hoist is provided.

A double cleated ladder or two ladders will be provided where ladders are the only means of exit from a working area for 25 or more employees or two way traffic is required.

The point of access at a ladder shall remain clear (you shouldn't have to climb over material to get to the ladder to exit a level I case of emergency).

Stairway and ladder fall protection shall be provided before employees begin work (handrails or landings).

LADDER REQUIREMENT;

Ladders must be capable of supporting 4 times the maximum intended load

Ladder rungs, cleats and steps shall be parallel, level, and evenly spaced. Portable ladder rungs should be not less than 10" apart, not more than 14" apart center to center, and the rails shall be at least 11 1/2" apart.

Ladders shall not be tied together to provide longer sections unless they are designed to.

Make sure the metal spreader is locked on step ladders.

When two or more ladders are used to reach an elevated work area, a platform or landing will be provided.

Do not paint wooden ladders.

PROPER USE;

When ladders are used to access an upper landing, the ladder shall extend 3' above the landing. If that is not possible, the ladder will be tied-off and a handrail provided.

Ladders shall be free of grease, oil or other slipping hazards.

Ladders shall not be loaded beyond their rated capacity. Most ladders have a rating on the rails.

Ladders shall be used only for the purpose they were designed for .

Extension ladders shall be placed at an angle that the horizontal distance from the top support to the foot of the ladder is approximately 1/4 of the working length of the ladder (if the ladder is on an eave 20' high, the bottom of the ladder should be 5' out.) There is a gauge on the side of most ladders. Job made ladders must be 1/8 the working length.

Ladders must be used only on stable and level surfaces unless secured to prevent displacement. Tie-off ladders whenever you can.

Ladders shall not be used on slippery surfaces unless they have slip resistant feet and are secured.

Ladders placed where they can be displaced by traffic or other activities such as doorways, etc. shall be tied-off and or barricades shall be erected to keep those activities away from the ladder.

The area around the base of the ladder shall be kept lean and clear of debris.

Ladders shall not be moved, shifted, or extended while occupied.

Do not lean beyond the rails of a ladder, climb down and move it.

Do not climb on the cross-bracing of a step ladder.

Do not step on the top or top step of a step ladder.

Ladder shall be inspected by a competent person on a regular basis or after any occurrence that could affect their safe use.

Don't tie or fasten ladders together

Must have offset platform when using two or more portable ladders to gain access

Don't varnish or paint wood ladders

If you build ladders on site or anywhere there are different dimensions for width, steps/treads for different types of ladders. The maximum distance between rungs is 14" for portable ladders and 16" for fixed ladders.

This is why you can't climb a scaffold end frame. You need to have a fixed ladder on a scaffold and it must have 7" of clearance between the ladder and the scaffold

Rungs on job made ladders must be level, parallel and uniformly spaced

Ladders with structural defects such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded parts, or other faulty or defective parts, shall either be tagged "DO NOT USE" or repaired immediately.

Ladders which are repaired shall be returned to original condition.

Always face the ladder when climbing up or down.

Always use one hand to grasp the ladder.

Do not carry any object or load that could cause you to lose balance and fall.

Do not lean a closed step ladder against a wall and climb it, always open and lock spreader.

Ladders must be between 7-12" to the access/egress step.

STAIRWAYS;

Stairways used for construction (not a permanent part of the structure) shall have landings not less than 30" in the direction of travel and extend at least 22" in width at every 12 ft. or less of vertical rise.

There are no spiral stairs in construction

Stairs shall be installed between 30 and 50 degrees from horizontal.

Riser and tread shall be uniform in height and depth.

Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20".

Stairways shall be free of protrusion (nails), and slippery conditions i.e. snow, ice, grease, and oil.

Metal pan stairway that haven't been filled with concrete cannot be used unless the pans have been filled temporarily with wood or other solid material to the top of the edge, and replaced when worn below that edge this is a trip hazard.

Stairways having four or more risers or rising more than 30 inches whichever is less shall be equipped with at least one handrail and stair rail system along each unprotected side or edge (stair rails shall be not less than 36" from tread to top of rail). Stair rail systems include midrail, vertical supports, and possibly screens.

Stair rails are on the open side of stairs.

Handrails are attached to the wall

On the open side of stairs, below the stair rail there should be horizontal members (midrail) halfway between stair rail and tread, or screen/mesh, or vertical balusters less than 19" apart.

Stair rails/handrails must be constructed to withstand at least a 200# force in all directions except up.

Handrail height range from 30"-37" above the nosing and must start at horizontal of upper stair. Must be surfaced so not to cause injury (metal burrs, nails, splinters, slag).

Handrails must be adequate as a handhold (metal pipe 1 1/4"-1 1/2" dia, 2/4 lumber or less)

Rail end must not stick out to cause a projection hazard.

Rail must be 3" away from the wall for clearance.

Landings must be guarded

TRENCHING SAFETY

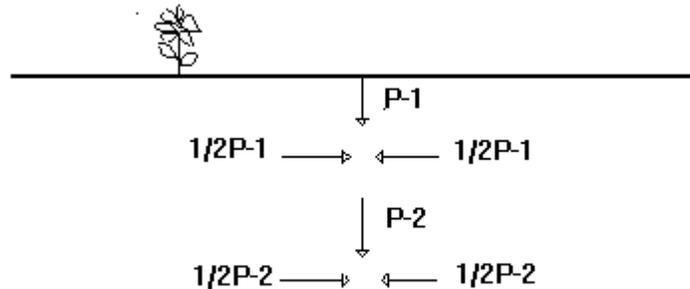
DEFINITIONS

A trench means a narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of the trench (measured at the bottom) is not greater than 15 feet. A trench is normally dug in the ground for the installation or repair of a utility.

Economy of operation demands a minimum of excavation per size of pipe or footing. Worker safety usually requires more excavation or time to install protective devices, and you have a conflict between production and safety. This trench safety procedure will help reduce that conflict through compromise and new awareness.

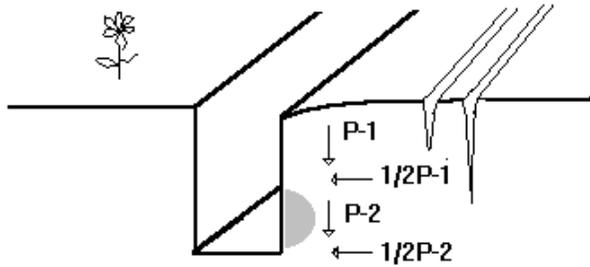
A trench is an unnatural situation. Except for rock cliffs and river banks, the average landscape has no vertical or near vertical slopes. A trench is like a wound, if you cut yourself, your body starts to heal and the cut closes up. The earth tries to do the same thing. When you cut a trench in the Earth it will try to heal itself, but we call it a cave-in. Even in natural areas, rock cliffs have rock slides and river banks collapse.

Soil or dirt is an extremely heavy material. A cubic foot of dirt can easily weigh 120 lbs. , a cubic yard 1-1/2 tons.



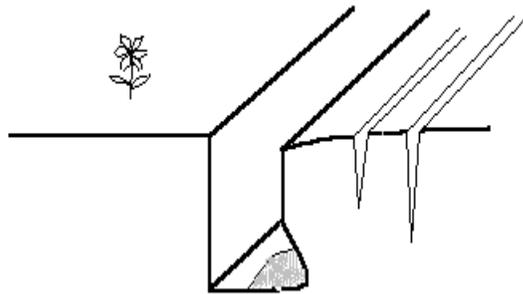
In a field the vertical pressure is $P=100$ lbs., the lateral pressure is $1/2P$. This makes the system stable.

When a trench is cut, the system becomes unstable and the Earth starts to move into the trench. Cracks start to form in the surface about 1/3 to 2/3 of the depth of the trench back from the edge and may be 1/2 the depth of the trench, (when water fills these cracks, the faster things start to go wrong).



The next thing to happen is the lower part of the trench wall fails because of the great stress of the soil above it.

Someone caught in a cave-in up to his shins can have about 100 lbs. on each foot. If the soil is wet you could have the suction effect created by mud and water (like when you lose a shoe in the mud) the suction can be as much as 750 lbs. for each of your feet depending on the water content and the soil type. This is how you can be trapped in a 12 inch cave-in.



This is where the most dangerous part of a cave-in occurs. You now have unstable soil hanging and ready for a second cave-in, which will happen all by itself. This is also when the would-be rescuer jumps in the ditch to save his buddy, just in time for the second cave-in, and there will be a second cave-in because the Earth is trying to heal itself. sixty percent of all cave in deaths are rescuers. If the second cave-in doesn't happen right away, the next thing that happens is the rescuer starts shoveling dirt out of the way so more dirt can cave-in, he

is shoveling away the dirt that is holding back the next cave-in. There could be 2, 3, 4 or even more cave-ins in one trench. If the first one doesn't get you, the second one might, the third one is always a possibility. Certain conditions will affect a trench wall and may cause the cave-in to occur or occur in a faster or more severe way. Water in the ditch or in the cracks that develop will make the ground extremely unstable. The water source could be rain, ground water, run-off, broken water line, or any other source. Vibration will increase the instability of the soils. Vibrations can come from nearby roads, equipment and machinery, changes in traffic must be monitored. Changes in soil types and conditions will affect the safety of the trench. While trenching you may come across previously disturbed soil, or the type of soils could change from clay to sand, and water content may increase or the soil may just dry out while the ditch is open.

This is what a trench is, how a cave-in occurs, and what typically happens during a cave-in. So don't jump in a ditch or open trench to help your buddy. Get help, keep people and machinery away from the edge of the trench, it is very unstable, stop any vibrations and stay calm.

OSHA says;

Trenches that are more than 20 feet deep must be designed by a professional engineer. Trenches 5 to 20 feet must be monitored by a competent person at least once a day and whenever conditions change. This person must be able to recognize and determine the different types of soil and recommend the appropriate sloping, shoring, or shielding method to be used. This person must also have the authority to stop work when hazardous conditions arise and correct the hazard so work can resume.

A ladder, stairway, or ramp must be provided in trenches that are 4 feet or more in depth, and require no more than 25 feet lateral travel for employees. Atmospheres will be tested in excavations greater than 4 feet before employees enter (oxygen content must be at least 19.5% and not more than 23.5%). Spoils piles will be kept at least 24" from the edge of the trench. Barriers will be installed and signs posted around the trench, or hole.

There are four basic classifications of soil and their recommended sloping angles.

- | | |
|----------------|-------------------------|
| 1. Solid Rock | 90 Degrees or vertical |
| 2. Type A Soil | 53 Degrees or 3/4 : 1 |
| 3. Type B Soil | 45 Degrees or 1: 1 |
| 4. Type C Soil | 34 Degrees or 1-1/2 : 1 |

Forget about solid rock and Type A soils. The competent person has been trained to determine soil types by a couple of field tests. If any questions arise as to the type of the soil or a competent person is not available, treat the soil as the less stable of use Type C.

Warning Signs of Trench Wall Failure

- tension cracks
- ground settlement
- changes in wall slope or wall bulge
- increase in strut loads
- spalling or sloughing of soils
- excessive seepage and piping of fine soils
- softening of sidewalls
- boiling of trench bottom
- creaking or popping sounds
- visual deformation of bracing system or trench

Always call the Ohio Utilities Protection Agency two working days before you dig (1-800-362-2764). If possible mark the proposed excavation with marking paint. OUPS will call the required utilities and they will mark their own utilities.

- | | |
|-------------------------|---|
| electric is red | water is blue |
| gas/oil is yellow | sewer is green |
| communication is orange | If a utility company says their line is dead and it has to be cut, let them cut it. |

DEMOLITION SAFETY

These suggestions for job safety cannot possibly cover every situation. Each operation presents its own problems. These are only general safety rules.

BEFORE DEMOLITION

Prior to demolition operation, a competent person should make an engineering survey of the structure to determine the condition of the framing, floors, walls, and the possibility of an unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed to hazards should also be checked.

A check of the building contents should also be performed. Did the structure hold hazardous materials at one time? Is asbestos present in the building? If any hazardous materials are detected, the appropriate governing agency should be notified.

All gas, electric, water, steam, sewer, and other utilities should be shut off, capped or otherwise controlled outside the building before demolition starts. All utility companies involved should be notified in advance.

If it is necessary to maintain power, water or other utilities during demolition, such lines should be temporarily relocated as necessary and protected and identified.

The walls or floors should be shored or braced before employees are required to work within a structure to be demolished that has been damaged by fire, flood, explosion or some other cause.

- all windows, glass doors and other fragile fixtures should be removed.

- Conspicuously post emergency phone numbers at the jobsite.

- Post warning signs at intervals around the perimeter of the jobsite.

- Establish an organized wrecking procedure to prevent premature collapse of the building.

- Erect an adequate barricade around the affected area. This is prevent unauthorized personnel from entering the project.

- Wall and floor openings should be guarded to protect employees working within the structure.

BASIC SAFETY RULES

All employees shall be removed from areas directly below floors or similar elevations prior to the demolition of walls, sections of walls, chimneys or other parts of the building which may fall on such upper floors or elevations.

The area where material is being lowered to the ground should be barricaded.

Chutes shall be constructed so material and debris cannot leave the chute before reaching the discharge end.

Chutes shall be used whenever the drop is 20 feet or more.

Chutes will be constructed of materials strong enough to assure that side wall will not rupture. The chutes may be wood or metal lined, but their openings must be closed when not in use. Chute openings for inserting material shall not be more than 48 inches long. Open top chutes may be used when the angle of incline is less than 45 degrees.

Use baffles and a change of direction every two floors or stories.

Protect chute openings into which employees dump debris by a standard guardrail. When material is dumped by mechanical equipment or wheelbarrows, a 4 x 4 inch toeboard should be provided.

When existing elevators are used for removing debris, make sure they are not loaded beyond their rated capacity.

Openings cut in floors for the disposal of materials shall be no larger than 25% of the total floor area, unless shoring is installed to safely carry the intended load.

HAZARD COMMUNICATION PROGRAM

The OSHA Hazardous Communication Standard requires that employees be made aware of the hazardous chemicals to which they are exposed.

PERSONAL PROTECTIVE EQUIPMENT

Wear hard hats for protection from falling or flying objects, from physical contact with rigid objects, and from electrical shock and hair entanglements.

Wear a shirt at all times for protection from burns, abrasions, insect bites and lacerations.

Wear safety shoes on site, and keep them in good condition to ensure solid and secure footing.

Use proper safety eyewear and face protection when operating saws or other cutting or chipping tools.

Wear gloves that fit properly when there is a danger of burns, cuts, or other lacerations.

When working with chemicals that are harmful to the skin, wear glove of the substance recommended by the chemical manufacturer specified.

Hot Work & Welding Safety

as mandated by 29 CFR 1910.252

Purpose

The purpose of this program is to establish written procedures to prevent fires resulting from any temporary operation involving open flames or producing heat and/or spark. Hot Work presents a significant opportunity for fire and injury. Company employees or contractors must apply all precautions of this program prior to commencing any welding or hot work. Reference: OSHA 29 CFR 1910.252.

- This program includes, but is not limited to brazing, cutting, grinding, soldering, thawing pipes, torch applied roofing and welding.
-

Scope

This program applies to work performed by Ingle-Barr Inc. employees and contractors performing work in existing buildings, new construction in existing building or new construction attached to existing building.

Definitions

- *Welding/Hot Works Procedures*: any activity that results in sparks, fire, molten slag, or hot material that has the potential to cause fires or explosions.
- *Examples of Hot Works*: Cutting, Brazing, Soldering, Thawing Pipes, and Torch Applied Roofing, Grinding and Welding.
- *Special Hazard Occupancies*: Any area containing Flammable Liquids, Dust Accumulation, Gases, Plastics, Rubber and Paper Products.

Training

- Review of requirements listed in OSHA 1910.252
 - Use of Hot Works Permit System Supervisor Responsibilities
 - Fire Watch Responsibilities - specifically, the fire watch must know:
 - Their *ONLY* duty is Fire Watch
 - When they can terminate the watch
 - How to use the provided fire extinguisher
 - How to activate fire alarm if fire is beyond the incipient stage
 - Operator Responsibilities
 - Contractor Responsibilities
 - Documentation Requirements
 - Respirator Usage Requirements
 - Fire Extinguisher Training
-

Hot Work Permit Procedures

1. Hot work should not be performed if the work can be avoided or performed in a safe manner. When practical, objects to be welded, cut, or heated must be moved to a designated safe location, i.e. maintenance shops.
2. If hot work must be performed, a Hot Work Permit must be obtained from the Safety Office prior to any work being done. The safety director will inspect the area prior to issuing a permit.
3. All precautions on the Hot Work Permit must be met prior to any work. The safety director or a designated representative of the site will complete the permit. The permit contains a checklist that must be completed prior to issuing a permit.
4. The Hot Work Permit is only good for the date(s) and time specified on the permit. A copy of the permit must remain at the hot work location until the fire watch has ended and the area is cleared. The fire watch personnel will be responsible for signing the permit following the work assignment.
5. All personnel (employees, contractors, building occupants) must be suitably protected against hazards generated by the work, i.e. heat, sparks, fumes, welding rays, etc. This may include, but not limited to, the use of personal protective equipment, shields, screens, or local exhaust ventilation.

Hot Work Procedures

OSHA 29 CFR 1910.25 required fire prevention actions for welding/hot works.

1. Where practical, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles shall be protected with flame proof covers, shielded with metal, guards, curtains, or wet down material to help prevent ignition of material.
2. Ducts, HVAC systems, and sources that might carry sparks to distant combustibles shall be protected or shut down.
3. Where cutting or welding is done near walls, partitions, ceilings, or on a roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.
4. If welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat. Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be provided on the opposite side of the work.
5. Welding shall not be attempted on a metal partition, wall, ceiling or roof having a covering or on walls having combustible sandwich panel construction.
6. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by combustion.
7. In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot works will be conducted. *All dust accumulation should be cleaned up following the housekeeping program of the facility before welding/hot works are permitted.*
8. Suitable extinguishers shall be provided and maintained ready for instant use.
9. A fire watch person shall be provided during and for 2 hours past the completion of the welding project.
10. A cutting/welding permit will be issued on all welding or cutting outside of the designated welding area.

Hot Work Permit – Prohibited Conditions:

Cutting or welding shall not be permitted in the following situations:

- In areas not authorized by management
 - Floor and wall opening cannot be covered
 - Flammable vapors or gases are present
 - Appropriate firefighting equipment is not available
 - In sprinkled buildings while such protection is impaired
 - In the presence of potentially explosive atmospheres, e.g., flammable liquids or gases
 - In areas near the storage of large quantities of exposed, readily ignitable materials, e.g., mattresses, paper
-

Welding & Hot Work Fire Prevention Measures

A designated welding area should be established to meet the following requirements:

- Floors will be swept and clean of combustibles within 35 ft. of work area.
- Flammable and combustible liquids and material will be kept 35 ft. from work area.
- Adequate ventilation providing 20 air changes per hour, such as a suction hood system should be provided to the work area.
- At least one 10 lb. dry chemical fire extinguisher should be within access of the 35 ft. of work area.
- Protective dividers such as welding curtains or non-combustible walls will be provided to contain sparks and slag to the combustible-free area.

Requirements for welding conducted outside the designated welding area.

- Portable welding curtains or shields must be used to protect other workers in the welding area.
- A hot works permit must be completed and complied with prior to welding operation.

Respiratory protection is mandatory unless an adequate monitored airflow away from the welder and others present can be established and maintained.

- Plastic materials must be covered with welding tarps during welding procedures.
 - **Fire Watch must be provided for all hot work operations.**
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Welding Standard Operating Procedures

The following pages list the Welding Standard Operating Procedures (SOP) and are applicable for all electric and gas welding. These SOPs are to be posted at each Designated Welding & Hot Work Area for quick reference and review.

SOP - Electric Welding

-

Perform Safety Check On All Equipment

- Ensure fire extinguisher is charged and available
- Ensure electrical cord, electrode holder and cables are free from defects (no cable splices are allowed within 10 feet of the electrode holder)
- Ensure PPE (welding hood, gloves, rubber boots/soled shoes, aprons) are available and have no defects.
- Ensure the welding unit is properly grounded.
- All defective equipment must be repaired or replaced before use

No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.

- Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby (Do not block emergency exits or restrict ventilation.)

Ensure Adequate Ventilation and Lighting

Execute Hot Work Permit procedures

- A hot work permit systems is in effect at IBI. Prior to any welding, cutting, brazing or other hot work, a permit must be obtained through the Safety Office. The procedures outlined in this program must be adhered to or hot work will not be performed. Failure to comply with these procedures will result in loss of work time without pay, or termination of employment.

Set Voltage Regulator No Higher Than the Following for:

- Manual Alternating Current Welders - 80 volts
- Automatic Alternating Current Welders - 100 volts
- Manual or Automatic Direct Current Welders -100 volts

Uncoil and Spread Out Welding Cable

- To avoid overheating, ensure proper contact of work leads and connections, remove any metal fragments from magnetic work clamps (to avoid electric shock do not wrap welding cables around a body part and avoid welding in wet conditions)

Fire Watch:

- A fire watch will be initiated by the safety director. The fire watch will be in effect throughout the work being performed, and for one hour after completion of the job, and until all welds have cooled.
- If welding is being performed on a metal or combustible wall where conduction or radiant heat may cause fire, a fire watch will be established on the other side of work area. This will require at least two personnel on hand during and after the work has a been completed.

Perform Final Fire Watch and Terminate Permit:

- A final walk through of the area shall be performed to ascertain that all hazards or potential fire hazards are abated. Once this determination is made the safety director will terminate the permit.

SOP: Gas Welding

Perform Safety Check on all equipment.

- Ensure tanks have gas and fittings are tight.
- Ensure fire extinguisher is charged and available.
- Ensure hoses have no defects.
- Ensure PPE (welding hood, gloves, rubber boots/soled shoes, aprons) are available and have no defects.
- All defective equipment must be repaired or replace before uses.

Remove flammables and combustibles:

- No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.
- Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby. (Do not block emergency exits or restrict ventilation.)

-----Use an authorized Air Filtering Respirator, if required.

-----Ensure Adequate Ventilation and Lighting.

-----Execute Hot Work Permit procedures.

-----Open Valves on Oxygen and Gas tanks to desired flow.

-----Shut Tank Valves & relieve hose pressure. Store hoses.

-----Fire watch for one hour after welding & until all welds have cooled.

-----Perform final fire watch and terminate permit.

Hot work procedures for confined space are found in the Confined Space Entry Program. Technical

Ingle-Barr Inc.

HOT WORK PERMIT

Permit No. _____

Type of Operation: <input type="checkbox"/> Welding <input type="checkbox"/> Cutting <input type="checkbox"/> Open Flame <input type="checkbox"/> Burning	
Permit Issued to: <i>(name of person)</i> _____	
Representing: _____ <i>(name of contractor)</i>	Phone: _____
Start Date: _____	Permit valid from _____ till _____
Location where work will be performed <i>(be specific)</i> _____ _____	
Brief Description of work <i>(be specific)</i> _____ _____	
Fire Watch _____ <i>(name)</i>	
Site assessment _____ _____	
Are you ready to work? <input type="checkbox"/> Yes <input type="checkbox"/> No	
HAVE YOU READ THE HOT WORK POLICY? <input type="checkbox"/> YES <input type="checkbox"/> NO	
Person requesting permit _____	
Permit issued: _____ <i>(Date & Time)</i>	Permit denied: _____ <i>(Date & Time)</i>
Signature of issuing supervisor _____	
Printed name of issuing supervisor _____	

POST THIS PERMIT WHERE IT WILL
BE READIBLY VISIBLE

SUPERVISOR'S MEETING

SAFETY MANUAL

All our safety policies will be kept in this book.

These policies will be added to and updated as required.

You will need to list all your chemicals on a master list and put it in your book, it must be kept up to date.

MSDS SHEETS

You must train your crews on each chemical they use and are exposed to. This training can come straight from the MSDS Sheet.

You must have them sign an attendance sheet for the training.

You must train when you get a new employee or when you get a new chemical. This training must be done before the employees are to use the chemical.

PPE

You must make sure your crews wear their PPE and they work safe.

If you have people who violate safety rules, I want to know, write it down (who, when, what).

SAFETY MEETING FORMS

Monday morning, before you start your job, go over the safety meeting forms. Read the meeting to the crew, ask for questions about the topic, ask for questions about anything else. Make sure they understand. If you cannot answer their question, write it down on the form and I'll get you the answer. During this time explain to your crew what they are going to be doing and how they are to proceed. Tell them what safety equipment and what tools they are going to need before they start so they have them when they start. Then have them sign the safety meeting form legibly. The supervisor must completely fill out the rest of the form.

This is your responsibility. You are in charge of these men. These responsibilities are a condition of employment, not an option. I will be more than glad to help you when I can, but I can't do it all.

SUBCONTRACTORS

Whenever IBI hires a subcontractor to do work, IBI is responsible to see that subcontractor is complying to all OSHA and IBI safety rules. It is our responsibility to inform them of any infraction of these rule and to see that they comply.

THIS SUPERVISOR POLICY WAS REVISED OR REVIEWED

<u>DATE</u>	<u>REVIEWED</u>	<u>REVISED</u>	<u>REVISION BY</u>
1/10/95		√	DSO
1/18/96		*	DSO
10/11/96	√		DSO
11/3/97	√		DSO
1/21/98	√		DSO
10/12/99	√		DSO
01/21/02	√		DSO
08/28/02		√	DSO
01/28/04		√	DSO
03/21/06	√		DSO
08/12/08	√		DSO
04/27/10		√	DSO
10/20/14	√		DSO

ELECTRICAL SAFETY MEETING

Electricity has long been recognized as a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires and explosions.

Experts in electrical safety have traditionally looked toward the widely used NEC for help in practical safeguarding of persons from these hazards. OSHA has also recognized the importance of the NEC in defining basic requirements for safety in electrical installations. In 1971 they included the entire NEC into the OSHA 1926 standard by reference. In 1986 they sat down and picked out the items from the NEC that they wanted and left the others out, thus making the document simpler and easier to read and understand.

The first couple of paragraphs of the standard say:

1. all electrical conductors and equipment shall be approved.

All electrical equipment must be inspected to insure it is free from recognized hazards that are likely to cause death or serious injury. Safety of the equipment will be determined by the following:

- a.) suitable equipment for the application
 - b.) mechanical strength and durability
 - c.) electrical insulation
 - d.) heating effects under use
 - e.) arcing effects
 - f.) classification by type, voltage, current capacity and specific use
 - g.) other factor that contribute to the practical safeguarding of employee who use or are likely to come into contact
2. Guarding-live parts of electrical equipment operating at 50 volts or more must be guarded against accidental contact by one of the following methods
 - a.) located in a cabinet, room, vault, or similar enclosure accessible only to qualified persons.
 - b.) use of permanent, substantial partitions or screens to exclude unqualified persons.
 - c.) located on a suitable balcony, gallery, or platform elevated and arranged to exclude unqualified persons.
 - d.) elevation of eight feet or more above the floor.

Entrance to rooms and other guarded locations must be marked with warning signs forbidding unqualified persons from entering, plus equipment must be marked w/appropriate caution signs.

Electric installations that are over 600 volts and that are open to unqualified persons must be made with metal-enclosed equipment or vault or area controlled by a lock, and be marked w/signs.

3. Conductors must be protected by from overcurrent in accordance with their ability to safely conduct current and be sized to handle the current. Fuses and circuit breakers must also be located or shielded that employees not be burned or otherwise injured by three operation e.g. arcing
4. Grounding of equipment connected by cord and plug-exposed noncurrent-carrying metal parts of cord and plug connected equipment that may be energized must be grounded.
 - a.) when in a hazardous location
 - b.) when operated at 150 volts to ground (except for guarded motors and metal frames of electrically heated appliances).
 - c.) when one of the following types of equipment is used
 - 1.) hand held motor-operated tools
 - 2.) cord and plug connected equipment used in damp or wet locations or by employees standing on the ground or on metal floors or working inside metal tanks or boilers.
 - 3.) tools likely to be used in wet and or conductive locations
 - 4.) portable hand lamps

Exception - tools that are double insulated, but they must be marked they are dbl. insulated.
If installation of electrical equipment (lighting, power, etc.) is made in accordance with the NEC it will be considered to be in compliance with the OSHA standard for: ground fault protection, protection of lamps on temporary wiring, suspension of temporary lights by cords, extension cord set and flexible cords.

Protection of Employees

The employee is not permitted to work near any part of an electric power circuit that the employee could contact in the course of work, unless the employee is protected against shock by de-energizing the circuit and grounding it by or guarding it effectively by insulation or other means.

Where the location of underground electric power lines is unknown, employees using jackhammers or hand tools that may contact a line must be provided with insulated protective gloves. Before work is begun it must be determined by inquiry (call OUPS), observation, or the use of instrumentation where the underground utility is located. The employee needs to know the location of such utilities, the hazards involved, and the means of protection needed.

Lock/out and tag/out

Must be used when doing maintenance on circuits and equipment.

GROUND-FAULT PROTECTION ON CONSTRUCTION SITES

INSULATION AND GROUNDING

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor. Grounding may be achieved through the use of a direct connection to a known ground such as a metal cold water pipe.

Consider, for example, the metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring. However, there is a hazard associated with housings and enclosures. A malfunction within the equipment-such as deteriorated insulation-may create an electrical- shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard. If a "hot" wire contacts a grounded enclosure, a ground fault results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to g-round. This wire is called an equipment grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user's knowledge.

Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

The use of a ground-fault circuit interrupter (GFCI) is one method used to overcome grounding and insulation deficiencies.

WHAT IS A GFCI?

The ground-fault circuit interrupter (GFCI) is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second.

PREVENTING SILICOSIS

Early Deaths From Dust

- 42 year old construction worker in Pennsylvania
- 37 year old construction worker in Ohio
- 49 year old construction worker in Oklahoma
- 41 year old construction worker in Indiana
- 44 year old construction worker in North Carolina
- 39 year old construction worker in Ohio

What is Silica?

Crystalline silica is the basic component of sand, quartz and granite rock. It is the most common mineral in the earth's crust. Airborne crystalline silica occurs commonly in both work and non-work environments. The most severe exposures to silica dust result from sandblasting to remove paint and rust from stone buildings, metal bridges, tanks and other surfaces using silica sand. Other activities that result in high exposure to silica dust are: chipping, hammering, and drilling rock. Crushing, loading, hauling and dumping rock. Abrasive blasting of concrete regardless of blast media used. Sawing, hammering, drilling grinding, and chipping of concrete or masonry. Demolition of concrete and masonry. Dry sweeping or pressurized air blowing of concrete, rock, or sand dust. mixing of concrete.

What is Silicosis?

Silicosis is a permanent lung disease. It is a scarring and hardening of the lung tissue caused when particles of crystalline silica are inhaled and become embedded in the lung. Silicosis is one of the oldest known occupational diseases, dating back to ancient Greece. Since the 1800s, the silicotic health problems associated with crystalline silica dust exposure have been referred to under a variety of names, including consumption, ganister disease, grinders' asthma, grinders' dust consumption, grinders' rot, masons' disease, miners' asthma, miners' phthisis, potters' rot, sewer disease, stonemason's disease, chalicosis, and shistosis.

Silicosis is the result of the body's response to the presence of silica dust in the lungs. The respirable particles or the dust small enough to enter the lungs can penetrate to the innermost parts of the respiratory systems. These are the alveoli (or airsacs) where the exchange of oxygen and carbon dioxide occurs. When workers inhale silica dust, they land on the alveoli, and white blood cells try to remove them. The dust particles are embedded. The lung tissue develops nodules and scarring around the trapped silica particles.

Formation of large numbers of "scars" following prolonged exposure causes the surface of the lungs to become less elastic and decreases the capacity of the lungs. This is noticed as shortness of breath following exertion. Symptoms seldom develop in less than five years and in many cases may take more than 2 years to become disabling or cause death.

Workers may develop any of three types of silicosis:

- Chronic silicosis, which usually occurs after ten or more years of exposure to crystalline silica at relatively low concentrations.
- Accelerated silicosis which results from exposure to high concentrations of crystalline silica and develops five to ten years after the initial exposure.
- Acute silicosis, which occurs where exposure concentrations are the highest and can cause symptoms to develop within a few weeks to four or five years after the initial exposure.

Initially, workers with silicosis may have no symptoms. As silicosis progresses, there may be difficulty in breathing and other chest symptoms such as cough. Infectious complications may cause fever, weight loss, and night sweats. Severe mycobacterial or fungal infections can complicate silicosis and may be fatal. Fungal or mycobacterial infections are believed to result when lung cells that fight these infections are overwhelmed with silica dust and are unable to kill mycobacteria. Medical evaluations of silicosis victims usually show the lungs to be filled with silica crystals. Furthermore, evidence indicates that crystalline silica is a potential cancer-causing carcinogen.

What Can Employees Do To Limit Their Exposure To Crystalline Silica?

The key to silicosis prevention is to prevent dust from being in the air. OSHA requires dust to be controlled whenever possible. A simple control may work, like a water hose to wet the dust down at the point of origin. Here are some steps to take to protect yourself:

- Employers are required to provide and assure the use of appropriate controls for crystalline silica dust. Be sure to use all available engineering controls such as water sprays and ventilation of contaminated structures. Substitution of less hazardous materials can be used.
- Be aware of the health effects of crystalline silica and that smoking adds to the damage.
- Know the work operations where exposure to crystalline silica may occur.
- Participate in any air monitoring or training programs offered by the employer.
- Use type CE positive pressure abrasive blasting respirators for sandblasting.
- For other operations where respirators may be required, wear a respirator approved for protection against crystalline silica dust. Do not alter the respirator in any way. Workers who use tight fitting respirators cannot have beards/mustaches which interfere with the respirator seal to the face.
- If possible, change into disposable or washable work clothes at the worksite: shower when possible, and change into clean clothing before leaving the worksite.
- Do not eat, drink, use tobacco, or apply cosmetics in areas where there is dust containing crystalline silica.
- Wash hands and face before eating, drinking, smoking or applying cosmetics.
- Post warning signs and rope off areas of exposure.
- Clean -up before going home, don't take this stuff back to our families.

Ingle-Barr Inc. Safety

Emergency First Aid

- Eye Exposure-if crystalline silica dust gets into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. If irritation is present after washing, get medical attention.
- Breathing-If a person breathes in large amounts of crystalline silica dust, move them to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.
- Rescue-Move the affected person from the hazardous exposure. If the person has been overcome, notify someone else and put into effect established emergency rescue [procedures. Do not become a casualty.

Spill and Disposal Procedures

- Persons not wearing protective equipment and clothing should be restricted from areas of spills or releases until clean-up has been completed.
- If crystalline silica has been released in hazardous concentrations, the following steps should be taken”
 1. Ventilate the area
 2. Collect spilled material in the most convenient and safe manner for reclamation or for disposal in a secured sanitary landfill.
- Waste disposal-crystalline silica may be disposed of in a sanitary landfill.

Warning Signs

Warning signs should be posted to mark boundaries of work areas contaminated with crystalline silica. These signs should warn workers about the hazard and specify any protective equipment required (goggles or respirators).

OSHA Special Emphasis Program

OSHA has targeted silica exposure for inspection because of the widespread use of the material, the number of related deaths and exposed workers, and silica’s health effects.

Electronics, foundries ceramics clay pottery, construction, agriculture, mining, railroad track setting, stone quarry, manufacturing of abrasives, soaps and detergents are soon of the industries where known exposures to crystalline silica have occurred or there are known cases of silicosis.

OSHA will identify these establishments. select sites for inspection randomly, he number of inspections will be determined by the regional directors, and site with effective control programs can be inspected and exited after the program has been reviewed.

Examples of potential sources for targeting

worker’s compensation data	hospital discharge data
OSHA 200	OSHA data on industries that have history of exposure
state surveillance data	Dodge Reports

**SAFETY MEETING
SCAFFOLD SAFETY**

SCAFFOLD CONSTRUCTION

The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose bricks, or concrete blocks shall not be used to support scaffold or planks. The poles, legs or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying or displacement. Scaffold legs shall be set on adjustable bases or plain bases secured to mud sills.

Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced.

SCAFFOLD ERECTION AND DISMANTLING

No scaffold shall be erected, moved, dismantled or altered except under the supervision of competent persons. Scaffolds shall not be erected or used in the immediate vicinity of power lines or electrical conductors until such are insulated, de-energized or otherwise rendered safe against accidental contact.

When scaffolds are being dismantled, the dismantling operation shall start at the top and work down. All disconnected members and connectors shall be lowered rather than dropped from the scaffold. The stability of the remaining assembled scaffold shall be maintained throughout the course of disassembly.

SCAFFOLD ACCESS

An access ladder or equivalent safe access shall be provided, except during the erection or dismantling. Safe access is defined as one of the following;

1. Portable wood, metal, or fiberglass ladders
2. Scaffold frame when the maximum spacing between climbing surface of the frame does not exceed 16 1/2" and the length of the climbing surface shall not be less than 10".
3. Hook-on or attachable metal ladders.
4. Step or stair access form specifically designed for your scaffold.
5. Direct access from adjacent structure or personnel hoist.

Ladders should be positioned so as not to tip the scaffold. Cross braces shall not be used as a means of access or egress.

SCAFFOLD GUARDRAILS

Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Scaffolds 4 to 10 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches shall have standard guardrails installed on all open sides and ends of the platform.

Guardrails shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor with the following exceptions;

1. During erection or dismantling
2. Scaffolding covering the entire floor area and not having any open sides or openings.

Guardrails shall be 2 x 4 inches, or the equivalent, approximately 42 inches high, with a midrail, when required. Supports shall be at intervals not to exceed 8 feet. Toe boards shall be a minimum of 4 inches in height. Guardrails must be capable of withstanding a 200 pound force applied in any direction except upwards without inches, but failure. Cross bracing is acceptable in lieu of a midrail when the crossing point of the two braces is at least 20 not more than 30 inches above the platform. Cross bracing is acceptable as a guardrail system provided the crossing point is between 31 and 48 inches above the platform. The endpoints at each upright shall be no more than 54 inches apart. Toeboards shall be required with guardrail systems on all open sides and ends of scaffolds at locations where persons are required to work or pass under the scaffold. Guard rail systems shall not be required on the building side when the platform is less than 16 inches from the building

PLANKING

All planking shall be scaffold grade, or the equivalent. The maximum permissible spans for 2 x 10 inch or wider planks;

	full thickness undressed lumber			nominal thickness lumber	
working load (psf)	25	50	75	25	50
permissible span	10'	8'	6'	8'	6'

Nominal thickness lumber is not recommended for heavy duty use.

1. Light duty (equivalent to one 250 pound person per plank)
 - painting window washing
 - cleaning light maintenance

2. Medium duty (equivalent to two 250 pound persons per plank)
 - brick laying
 - drywalling
 - equipment storage

3. Heavy duty (equivalent to three 250 pound persons per plank)
 - stone setting
 - equipment storage
 - heavy machinery

Planks shall overlap a minimum of 12 inches except for platforms supplied with cleats or hooks. Overlap shall occur at supports and each unit shall extend a minimum of 6 inches over the support.

At end supports, platform unit unless cleated or otherwise restrained by hooks or equivalent means at both ends, shall extend over the end support not less than 6 inches nor more than 18 inches.

Platforms on all working surfaces on all scaffolds shall be fully planked or decked with platform units as follows;

1. platform units will be placed as close as possible to adjacent units (no more than 1" between units or the width of the uprights.

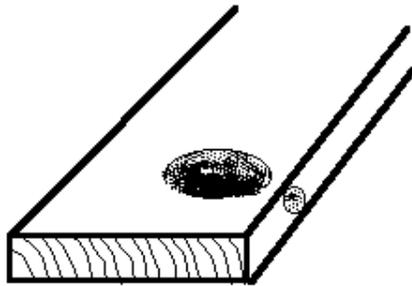
2. where full planking cannot be obtained using standard width units, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the guardrail supports shall not exceed 9 1/2".

Slippery conditions shall be removed from planks before working on them (ice, snow, grease, etc.)

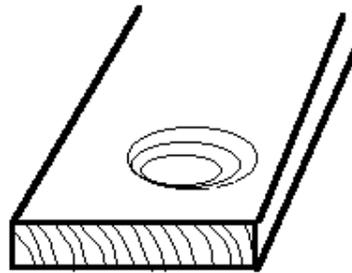
PLANK INSPECTION

Planks should be inspected before each use, lumber is subject to deterioration from weather, chemicals and loading.

1. Knots - a portion of a branch or limb that has been incorporated in a piece of lumber; a sound knot contains no decay, is firm and is smooth, while an unsound knot contains decay, is not firm and is not smooth.



SOUND KNOTS

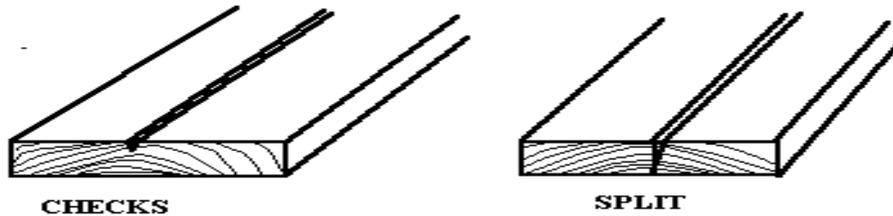


UNSOUND KNOTS

FACE WIDTH	KNOT SIZE
8"	1-1/2"
10"	2"
12"	2-1/2"

FACE WIDTH	KNOT SIZE
8"	1"
10"	1-1/2"
12"	1-1/2"

Checks - a separation of the wood normally occurring across or through the rings (usually a result of seasoning); a surface check occurs on one surface while a thorough check extends from one surface to the opposite surface.



3. Splits - a separation of the wood due to the tearing apart of the wood cells.

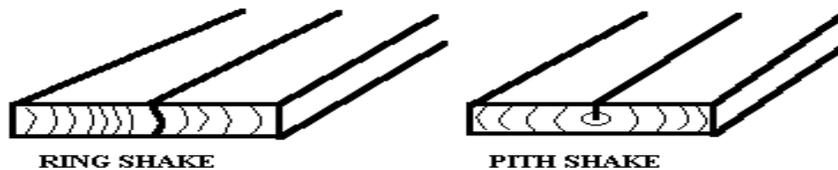
Scaffold plank splits are limited to the following lengths and widths.

Widths can equal 1/8"

6' and 8' planks may have 12" splits

10', 12', 14' and 16' planks may have 18" splits, but if there is an 18" split on one end there can only be a 9" split of the opposite end.

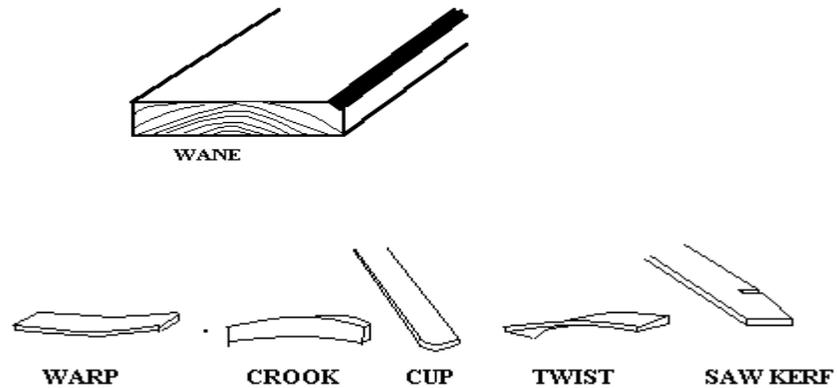
4. Shakes - a lengthwise separation of the wood between the rings, or through the pith; a surface shake occurs only on one surface, while a through shake extends from one surface to the other.



Surface shake - up to 2' in length

Through shake - on ends, equal in length to width away from ends, none through.

5. Wane - bark or lack of wood from any cause, except eased edges, on the edge or corner
1/4 the width, 1/4 the thickness but 5% may have wane 1/3 the width, 1/2 the thickness
for 1/4 the length.



LOADING

Scaffolds shall be capable of supporting, without failure, their own weight and at least four times the maximum intended load. They shall be designed and erected to safely support the design load.

TYING AND BRACING

Anchorage, guying, tying-off, or bracing of scaffolds shall be affixed to substantial and structurally sound structures or the equivalent. Tying the scaffold off will be done when there is the possibility of uplift, it shall also be secured with locking pins in the frame connectors. Tie your scaffold off when the height exceeds four times the minimum base dimension then every 26 feet vertically and 30 feet horizontally.

MANUALLY PROPELLED SCAFFOLDS

When free-standing mobile scaffolds are being used, the height shall not exceed four times the minimum base dimension. Outriggers may be included as part of the base dimension. Ohio Administrative Code says three times the base dimension.

Casters shall be designed to support four times the intended load, be 5” in diameter, and they will have locking devices.

The force necessary to move the scaffold shall be applied near or as close to the base as possible and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on surfaces free of obstacles and openings. The employer shall not allow employees to ride on scaffolds unless the following conditions exist:

1. the floor or surface is 3 degrees of level, and free from pits, holes, or obstructions
2. the minimum dimension of the scaffold base when ready to roll is at least 1/2 of the height
3. the wheels are equipped with rubber or similar resilient tires
4. all tools and materials are removed or secured from the platform before moving.

Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent movement.

PERSONAL PROTECTIVE EQUIPMENT

If you are over 6 feet above the ground or floor and you do not have a guardrail system on your scaffold, you will wear a safety harness and be tied off to a point that is capable of supporting 5000 pound weight.

**SAFETY MEETING
LOCKOUT/TAGOUT**

PURPOSE:

The purpose of this policy is to protect all employees working on equipment or in and around tanks, vessels, and chests. It is intended to eliminate any possibility of the machine or process starting up while work is being performed on that equipment. This policy applies most to electrical equipment and motors, but may also include stock, steam, water or chemical lines. The rules set forth in this policy must be followed in order to provide maximum protection. Failure to follow these rules will result in disciplinary action.

DEFINITIONS:

Tagout - a tag placed on the energy isolating device (switch, valve, breaker) is not a restraint. It must be legible, durable (waterproof), it can only be removed by the person who placed it and they should have their name and company name on the tag. It should never be ignored or by-passed. Tags should be used with locks.

Lock-out - locks placed on an energy isolating device that physically prevents it from being activated. Locks must be used whenever possible. Locks must be identified with sort of label which includes the company name and the name of the person who placed the lock.

Single lockout - is used when only one lock per person is required to make the equipment safe to perform work.

Multiple lockout - is designed for the use by departments when several lockouts are required to isolate one piece of equipment. These lockouts may be electrical, mechanical, hydraulic, valving, etc.

Lockout/tagout does not necessarily apply to the following situations: when servicing cord and plug connected electrical equipment (provided the equipment is unplugged and the plug remains in the exclusive control of the worker) , during hot tap operations that involve transmission and distribution systems for gas, steam, water, gasoline when shutting down the system is not possible, but employees must be protected by alternate means that are equally effective.

Before any lockout/tagout procedures are performed, a meeting between the owner or operator will be conducted to determine how the equipment needs to be de-energized. When the method of lockout has been determined and implemented, a try test will be performed. When it is determined that the equipment has been properly locked out, then work may be performed.

When you work on a piece of equipment you will have your own lock and the only set of keys. Before you start work you will place your lock on the lockout with your name to identify the lock. You will be the only one to have access to the key (so no one but you can take the lock off or start the equipment while you are working on it). If there are five people working on the same piece of equipment, there should be five individual locks on that piece of equipment. If one of these workers is replaced by another, the first worker will remove his lock and the second worker will install his lock. When work is completed you will promptly remove your lock.

Restoring equipment to service - check the equipment to make sure nonessential items have been removed and all components are operationally intact. Check all employees are at a safe distance. Insure all controls are neutralized. Remove all lockouts and re-energize if required

HEAT STRESS SAFETY MEETING

Under certain conditions your body may have trouble regulating its temperature. As a result, your body overheats and suffers from some degree of heat stress. Whether mild, moderate or severe, heat stress can come on suddenly and be dangerous to your health. Our bodies vary in their abilities to handle heat. You need to learn your limitations. Your body has a heat regulator that controls your body core temperature. But activity, heat, humidity, or lack of air movement can overwork this mechanism. Your body maintains a normal core temperature of 98.6 degrees by releasing excess heat into the air. The heat leaves your body through the blood vessels near the surface of the skin and through evaporation of sweat. Your level of activity and certain environmental conditions make the regulator work harder to increase your body's blood flow and sweat production.

1. Blood Flow - the regulator tells the blood vessels near the surface of the skin to expand. The extra blood brings more body heat to the surface and releases it into the air. To keep cool, your body needs enough water and minerals such as salt to keep its blood vessels supplied with blood.
 - a. Activity - the more active you are, the more heat your muscles generate. Heavy activity also set up competition between your muscles and the skin for the blood supply. This extra blood going to the muscles can't be used for cooling the body.
 - b. Environmental Temperature - as the temperature in your environment goes up, so does your body temperature. When it's hot from the sun or other radiant heat source, such as furnace, your body can't transfer heat to the air as effectively.
2. Sweat Production - If increased blood flow alone isn't enough, your regulator also steps up production of sweat. This allows more heat to be carried away through evaporation. You can lose up to a quart of water, plus important minerals such as salt, each hour you sweat - water that must be replaced to keep you feeling well and healthy.
 - a. Air Movement - air moving across your skin carries away heat from its surface; it also helps sweat evaporate. But with little air movement, these processes don't work as well.
 - b. Humidity - the higher the humidity, the less sweat evaporates. That's because the moisture content in the air is already high, making it difficult for the air to absorb more moisture.

When these conditions prevent your body from cooling itself, you are in risk of having heat stress.

Know your environment

Drink plenty of water

Take appropriate breaks

Wear proper clothing

Acclimate yourself

Stay in good shape

Eat wisely

Know special risks (alcohol, allergies, illnesses)

HAZARDOUS COMMUNICATION SAFETY MEETING

DEFINITIONS;

1. Hazardous Chemical - any chemical which presents either a physical or health hazard.
2. Physical Hazard - a material which can catch fire, explode, or react with other substances to burn or hurt you.
3. Health hazard - chemicals that may present hazards to you on the job do so by being taken into your body and causing injury to living tissue, illness, or disease. Toxins can enter your body by inhalation (breathing fumes, dust, mist, smoke or gas) which after entering your lungs is absorbed by the bloodstream. Toxins can be absorbed by contact with the skin in the forms of liquid, solid, or gas and carried to other parts of the body. Finally toxins can be swallowed, usually by eating contaminated foods or eating with dirty hands.

OSHA has required all companies to have a written "Hazardous Communication Program" whose purpose is to establish methods of organizing and communicating the necessary information to workers about the hazards associated with the chemicals they use on the jobsite.

The program includes;

1. a list of all hazardous and potentially hazardous chemicals found in the jobsite.
2. MSDS sheets for each of these chemicals.
3. labels on all containers
4. employee training
5. "The Right To Know Overview"

LABELS

Labels are used to identify the material in the drum, can, box, etc. They are placed on the container by the manufacturer. It is the responsibility of the supervisor to ensure the labels are in place or to re-label when the original label is missing or destroyed. At the minimum, the label should include;

1. the manufacturer's name and address
2. the chemical identity
3. the appropriate hazard warnings

If you remove a chemical from its original container you do not have to label it if it is for your use only and you will use it all. If you leave at the end of the day or shift and you have any of this material left in your container, it needs to be labeled or emptied.

TRAINING

All employees who work with or may be exposed to potentially hazardous chemicals will receive training prior to the use of that chemical by your supervisor. Whenever a new chemical is introduced onto the jobsite or a new employee, training will occur and it will be documented.

MULTI-EMPLOYER SITES

We will provide subs or other contractors working on or near our jobsites with access to all MSDS sheets and labeling information concerning hazards at the site.

MATERIAL SAFETY DATA SHEETS

In addition to labels, manufacturers and suppliers of chemical we purchase and use are required to supply a “material safety data sheet” on each hazardous material they ship us. Your supervisor will keep a complete list of all hazardous chemicals and a MSDS sheet for each one of those chemicals on each jobsite. These MSDS ‘s are available to you at any time. The MSDS tells you how to use, handle and store the chemical safely. Each MSDS may look a little different, but all give you the same basic information. The information is sometimes complex and you can ask your supervisor any questions you have.

HOW TO USE AN MSDS

Chemical Identification. The first section of the MSDS helps you identify the chemical. It lists the name of the chemical, any trade names, and the chemical manufacturer’s name and address. This section may also list an emergency phone number.

Hazardous Ingredients. This section lists what’s in the chemical that can harm you. It also lists the concentration of the chemical to which you can safely be exposed, often listed as the permissible exposure limit (PEL) or the threshold limit value (TLV). These safe exposure limits are usually figured for average exposures over a typical work shift.

Physical data. This section describes the chemical’s appearance, order, and other characteristics. **Percent volatile**, for instance, is how much of the chemical evaporates at room temperature. Sulfuric acid has a low percent volatile, but can be harmful if inhaled. Respiratory protection or extra ventilation may be needed

Fire and Explosive data. Here you can find at what temperature the chemical ignites, called the flash point. If a chemical is **flammable**, it ignites below 100° F. If it is combustible, it ignites at 100° F or above. This section also lists extinguishing media-what will put the fire out safely - such as water spray, foam, or other type of fire extinguisher.

Health Hazard. This section lists symptoms of overexposure, such as skin rash, burn, headache, or dizziness. It also tells you first aid and emergency procedures in case of overexposure, such as flushing your exposed skin with running water for 15 minutes. It may also list any medical conditions that can be aggravated by exposure to the chemical.

Reactivity data. Here you will find whether the chemical “reacts” with materials or conditions.

Incompatibility lists the materials, such as water or other chemicals that cause the chemical to burn, explode, or release dangerous gases. Instability list the environmental conditions, such as heat or direct sunlight that causes a dangerous reaction.

Spill or Leak Procedures. This section tells you what to use to clean up an accidental spill or leak. No matter what the chemical is, always notify your supervisor right away. Before cleaning up a chemical spill, you may need to wear respiratory protection, gloves, safety goggles, or protective clothing. This section may also include notes on how to dispose of the chemical safely.

Special Protection. Here you will find a listing of any personal protective equipment (respiratory protection, gloves, safety goggles) you need to work safely with the chemical. If protective equipment is needed, this section may list the specific types that are recommended, such as a full-face mask respirator, rubber gloves and chemical safe goggles.

Special Precautions. This section lists other special precautions to follow when handling the chemical. This may include what to have nearby to clean up a spill or put out a fire, and what safety signs to post near the chemical. This section also lists other health and safety information not covered in the other parts of MSDS. Although not all MSDS sheets follow this order, they all contain this information.

Read the labels, Investigate odors, Know the hazards, Don’t rush or take shortcuts, Use the required PPE, Keep hands and clothing clean, Know what to do in an emergency, Don’t smoke in work areas, Store chemicals safely, Report any suspected problem to your supervisor, Dispose of chemicals in approved ways

**SCAFFOLD SAFETY
SAFETY MEETING**

Scaffolds shall be erected in accordance with the requirements of OSHA 1926.451 and company rules;

1. All scaffold components shall be thoroughly inspected before erection, and if found to be damaged, or defective shall be repaired immediately, or tagged "DO NOT USE" until it can be repaired. No damaged or defective scaffold shall be used.
2. All scaffold shall be erected on sound, rigid footing, and be capable of carrying the maximum intended load without settling or displacement, (unstable objects such as barrels, boxes, loose bricks or concrete blocks shall not be used to support scaffolds or planks).
3. Evenly distribute material loaded onto scaffolds
4. Scaffolds four to ten feet in height with a horizontal dimension in either direction of less than 45 inches shall have standard guardrails installed on all open sides and ends. (Mead requires guardrails on all scaffolds.) All scaffolds 10 feet and taller shall have standard guardrails and midrails.
5. Guardrails shall be 2x4's, approximately 42 inches high, with a 1x6 midrail when required. Supports shall be at intervals of no more than 8 feet. Toe boards shall be 4 inches high.
6. Where persons are required to work or pass under the scaffold, scaffold shall be provided with a screen between the toeboard and the guardrail with a 1/2 inch mesh (try to keep people from under the scaffolds).
7. All planking shall be scaffold grade or equivalent.
8. Scaffold planking shall be overlapped a minimum of 12 inches or secured from movement.
9. Scaffold plank shall extend over its end supports not less than 6 inches nor more than 12 inches.
10. An access ladder or equivalent safe access shall be provided.
11. Scaffolds shall be properly braced by diagonal braces so the scaffold is always square, plumb, and level.
12. Scaffolds shall not be erected or used in the immediate vicinity of power lines, or electric conductors until the lines are insulated, de-energized or otherwise rendered safe from accidental contact.
13. Overhead protection shall be provided for workers on a scaffold exposed to overhead hazards.
14. To prevent movement, free standing scaffolds shall be secured to the building or structure when the height of the scaffold exceeds four times the minimum base width and then 26 feet vertically thereafter. Ties should be no more than 30 feet apart horizontally.
15. Install additional ties when weather barriers, or arms are installed on the scaffold.
16. Scaffolds over 125 feet in height shall be designed by a registered professional engineer.

MOBILE SCAFFOLDS

1. Free standing mobile scaffolds heights shall not exceed four times the minimum base dimension.

Ingle-Barr Inc. Safety

2. Casters shall be properly designed to support four times the maximum intended load and shall have locking devices to hold the scaffold in position. Casters will be locked before getting on the scaffold.
3. Scaffolds shall be properly braced.
4. Platforms will be tightly planked the full width of the scaffold and secured in place.
5. A ladder shall be provided for access.
6. The force applied to move the scaffold shall be applied as near the base as possible. Scaffolds shall only be moved on surfaces that are level, free of obstructions, and openings.
7. Employee shall not ride on mobile scaffolds unless;
 - a. the floor is within 3 degrees of level, free of pits, holes or obstructions
 - b. the minimum dimension of the scaffold base is at least 1/2 of the height
 - c. the wheels are equipped with rubber or other resilient tires
 - d. all tools and materials are secured or removed from the platform before the scaffold is moved
 - e. in other words do not ride on mobile scaffolds unless you have too
8. Guardrailing applies to mobile as it does on fixed scaffolds.
9. Look for overhead obstructions and electrical hazards before moving scaffolds.
10. Work only within the platform, do not extend beyond the railings.
11. Do not bridge between two rolling towers with planks.

LADDERS SAFETY MEETING

WHEN LADDERS ARE REQUIRED OSHA 1926.1051;

Ladders or a stairway shall be provided at all points of access when there is a break in elevation of 19 inches or more and no ramp, runway, sloped embankment, or personnel hoist is provided.

A double cleated ladder or two ladders will be provided where ladders are the only means of exit from a working area for 25 or more employees or two way traffic is required.

The point of access at a ladder shall remain clear (you shouldn't have to climb over material to get to the ladder to exit a level I case of emergency).

Stairway and ladder fall protection shall be provided before employees begin work (handrails or landings).

LADDER REQUIREMENT;

Ladders must be capable of supporting 4 times the maximum intended load

Ladder rungs, cleats and steps shall be parallel, level, and evenly spaced. Portable ladder rungs should be not less than 10" apart, not more than 14" apart center to center, and the rails shall be at least 11 1/2" apart.

Ladders shall not be tied together to provide longer sections unless they are designed to.

Make sure the metal spreader is locked on step ladders.

When two or more ladders are used to reach an elevated work area, a platform or landing will be provided.

Do not paint wooden ladders.

PROPER USE;

When ladders are used to access an upper landing, the ladder shall extend 3' above the landing. If that is not possible, the ladder will be tied-off and a handrail provided.

Ladders shall be free of grease, oil or other slipping hazards.

Ladders shall not be loaded beyond their rated capacity. Most ladders have a rating on the rails.

Ladders shall be used only for the purpose they were designed for .

Extension ladders shall be placed at an angle that the horizontal distance from the top support to the foot of the ladder is approximately 1/4 of the working length of the ladder (if the ladder is on an eave 20' high, the bottom of the ladder should be 5' out.) There is a gauge on the side of most ladders. Job made ladders must be 1/8 the working length.

Ladders must be used only on stable and level surfaces unless secured to prevent displacement. Tie-off ladders whenever you can.

Ladders shall not be used on slippery surfaces unless they have slip resistant feet and are secured.

Ladders placed where they can be displaced by traffic or other activities such as doorways, etc. shall be tied-off and or barricades shall be erected to keep those activities away from the ladder.

The area around the base of the ladder shall be kept lean and clear of debris.

Ladders shall not be moved, shifted, or extended while occupied.

Do not lean beyond the rails of a ladder, climb down and move it.

Do not climb on the cross-bracing of a step ladder.

Do not step on the top or top step of a step ladder.

Ladder shall be inspected by a competent person on a regular basis or after any occurrence that could affect their safe use.

Don't tie or fasten ladders together

Must have offset platform when using two or more portable ladders to gain access

Don't varnish or paint wood ladders

If you build ladders on site or anywhere there are different dimensions for width, steps/treads for different types of ladders. The maximum distance between rungs is 14" for portable ladders and 16" for fixed ladders. This is why you can't climb a scaffold end frame. You need to have a fixed ladder on a scaffold and it must have 7" of clearance between the ladder and the scaffold

Rungs on job made ladders must be level, parallel and uniformly spaced

Ladders with structural defects such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded parts, or other faulty or defective parts, shall either be tagged "DO NOT USE" or repaired immediately.

Ladders which are repaired shall be returned to original condition.

Always face the ladder when climbing up or down.

Always use one hand to grasp the ladder.

Do not carry any object or load that could cause you to lose balance and fall.

Do not lean a closed step ladder against a wall and climb it ,always open and lock spreader.

Ladders must be between 7-12" to the access/egress step.

STAIRWAYS;

Stairways used for construction (not a permanent part of the structure) shall have landings not less than 30" in the direction of travel and extend at least 22" in width at every 12 ft. or less of vertical rise.

There are no spiral stairs in construction

Stairs shall be installed between 30 and 50 degrees from horizontal.

Riser and tread shall be uniform in height and depth.

Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20".

Stairways shall be free of protrusion (nails), and slippery conditions i.e. snow, ice, grease, and oil.

Metal pan stairway that haven't been filled with concrete cannot be used unless the pans have been filled temporarily with wood or other solid material to the top of the edge, and replaced when worn below that edge this is a trip hazard.

Stairways having four or more risers or rising more than 30 inches whichever is less shall be equipped with at least one handrail and stair rail system along each unprotected side or edge (stair rails shall be not less than 36" from tread to top of rail). Stair rail systems include midrail, vertical supports, and possibly screens.

Stair rails are on the open side of stairs.

Handrails are attached to the wall

On the open side of stairs, below the stair rail there should be horizontal members (midrail) halfway between stair rail and tread, or screen/mesh, or vertical balusters less than 19" apart.

Stair rails/handrails must be constructed to withstand at least a 200# force in all directions except up.

Handrail height range from 30"-37" above the nosing and must start at horizontal of upper stair. Must be surfaced so not to cause injury (metal burrs, nails, splinters, slag).

Handrails must be adequate as a handhold (metal pipe 1 1/4"-1 1/2" dia, 2/4 lumber or less)

Rail end must not stick out to cause a projection hazard.

Rail must be 3" away from the wall for clearance.

Landings must be guarded

PERSONAL PROTECTIVE EQUIPMENT SAFETY MEETING

HARD HATS

Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or electric shock and burns shall be protected by protective helmets.

This is OSHA Standard 1926.100 word for word. What that means is when you're on a rolling scaffold or scissor lift and your head is in the bar joists, duct work, plumbing, electric or anything else you will wear a hard hat. If you are working under these people on lifts or scaffold or anywhere there is any one above you where materials or tools could fall, you will wear a hard hat. If you are on a lift, ladder or scaffold near electric conductors you will wear a hard hat. You will wear a hard hat during all parts of a demolition job (inside and outside the structure). You will wear a hard hat when operating any heavy equipment. I don't want to have to make you wear a hard hat all the time, so you need to wear them when they are necessary. You can wear them all the time if you want. If I find you aren't wearing them when you should, we will need to change the policy. Head injuries are very serious and can be permanent. You can ask Jeff Holdren, he is a believer.

HEARING PROTECTION

Whenever it is not feasible to reduce the noise levels of duration of exposure to permissible levels, hearing protection will be provided and used. It is very hard for us to reduce the noise levels. Noise is a part of construction work and unfortunately so are ear plugs. Ear protection shall be worn when using or working near power tools, air tools, jackhammers, heavy equipment such as bulldozers, backhoes, loaders, etc., around loud machinery, when in areas where noise is amplified (large empty rooms) and during demolition work. Whenever there is excessive noise, whether you are creating the noise or someone else, you will wear ear protection.

Hearing loss cannot be reversed or corrected, when it is gone, it is gone for good. If you are not sure the noise is loud enough to wear ear plugs, put them in. Cotton is not an acceptable hearing protection device. Normal conversations is about 45-50 dBA, heavy equipment is 85-90 dBA, a jackhammer is 100-120 dBA, a rock band is 120-130 dBA, and a gunshot is 140+ dBA. Hearing protection should be worn when noise levels reach 85-90 dBA.

EYE AND FACE PROTECTION

OSHA says employees shall be provided with eye and face protection equipment when machines or operations present potential eye and face injury from physical, chemical, or radiation agents. Eye and face protection shall meet ANSI Z87.1 - 1968. Employees whose vision requires corrective lenses shall be protected by goggles, over-the-glasses safety glasses or prescription safety glasses.

Eye protection shall be worn when drilling, burning, chipping, grinding, sanding, routing, hammering, welding, spraying, mixing, or whenever there is the possibility of flying, splashing, glaring, or whenever your supervisor requires them. Eye protection shall be worn during all demolition work.

Eye protection shall be kept in good repair and clean condition. You are provided with safety glasses and you are required to wear them at the appropriate times. The only exception to the rule is when they become fogged and you cannot see what you are doing, then they will be put back on as soon as possible. I have an eye and face protector selection guide and there will be one by the time box.

SAFETY SHOES

Will be worn at all times by all employees, no exceptions unless you can provide a doctor's excuse and then I have some other foot protection that is even worse. Safety shoes will have a hard sole and a steel toe, preferably a boot type shoe, but no tennis shoes.

GLOVES

Will be worn when handling materials with sharp edges, splinter hazards, and extreme temperatures. Rings and watches are a constant hazard, it is recommended that they be removed at work.

FALL PROTECTION

Each employee on a walking or working surface with unprotected side or edge which is 6' or more high shall be protected from falling by use of a guardrail system, safety net, or personal fall protection system. Safety belts, lifelines, body harnesses, and lanyards shall be used only for employee safeguarding (do not use lanyards to pull trucks out of the mud or hoist materials). These items must be inspected before each use and after subjected to a fall or shock. Look at the rivets, buckles, stitching, and "D" rings. If it is found to be damaged or weakened, it must be discarded. You can use a safety belt when you need fall prevention (that is to keep you 6' or more from a 6' high fall hazard). You can use a safety belt for fall protection until Jan. 1998 after that date you will need a safety harness.

You need to wear fall protection when you;

- are 6' above the ground (4' at the Mead)
- are outside of protected areas (no guardrails or handrails)
- are closer than 6' from a roof edge or drop off
- are working on a suspended scaffold
- are working above vertical rebar (which should be covered)
- are working above operating equipment

Only approved belts, harnesses, lanyards, lifelines etc. will be used. You should always have the "D" ring in the back. Lifelines and lanyards shall be secured to and anchored above the point of operation so that you limit your fall to, OSHA says 6' or less, or so you do not hit the surface below, 4' is much better, there is less force when you stop. Your anchorage point must be capable of supporting a minimum dead weight of 5000lbs. per person (no sprinkler lines, conduit, duct work, etc.). If you are tying off to the same point as someone else, it must be capable of supporting 10,000lbs. or 5000lbs. per person. Lanyard with non-locking snap hooks can roll out of the "D" rings, be very careful. Effective January 1, 1998, only locking snap hooks will be allowed and only safety harnesses will be allowed.

Guardrail systems - top rails shall be 42" +/- 3" above the walking/working level. They shall be constructed of 2x4's. Toe boards shall be constructed of 1x4's with the 4" dimension vertical, and the mid rails shall be 2x4's. Guard rails must be supported at least every 8' and must be capable of withstanding a 200lb. force.

Safety nets are placed below the work level and must be secured and capable of stopping the load without contacting the lower surface.

Warning line system - barrier erected on a roof to warn employees they are approaching an unprotected roof side or edge, and which designates an area where work takes place without the use of guard rails, body belts or safety net systems to protect employees in the area. It must be erected around all sides of the work area and not less than 6' from the edge. It is made of rope, wire, chain and must be flagged at least every 6'. It shall be no less than 34" high at the lowest sag point.

**TRENCHING SAFETY
SAFETY MEETING**

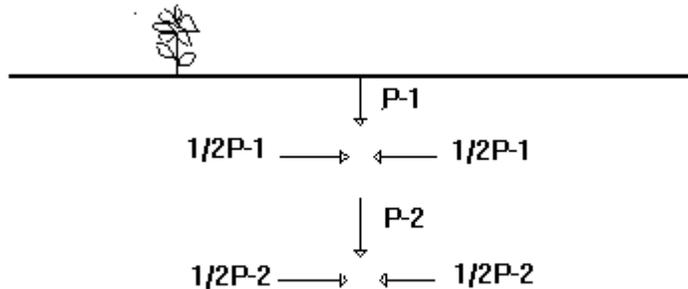
DEFINITIONS

A trench means a narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of the trench (measured at the bottom) is not greater than 15 feet. A trench is normally dug in the ground for the installation or repair of a utility.

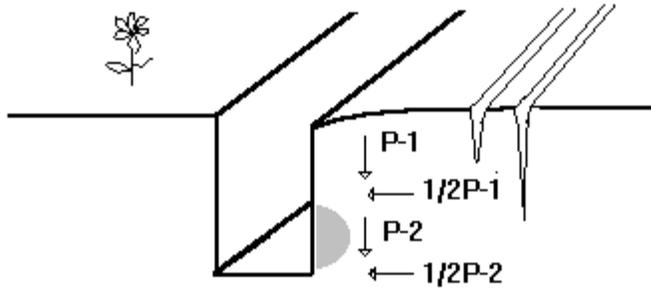
Economy of operation demands a minimum of excavation per size of pipe or footing. Worker safety usually requires more excavation or time to install protective devices, and you have a conflict between production and safety. This trench safety procedure will help reduce that conflict through compromise and new awareness.

A trench is an unnatural situation. Except for rock cliffs and river banks, the average landscape has no vertical or near vertical slopes. A trench is like a wound, if you cut yourself, your body starts to heal and the cut closes up. The earth tries to do the same thing. When you cut a trench in the Earth it will try to heal itself, but we call it a cave-in. Even in natural areas, rock cliffs have rock slides and river banks collapse.

Soil or dirt is an extremely heavy material. A cubic foot of dirt can easily weigh 120 lbs. , a cubic yard 1-1/2 tons.



In a field the vertical pressure is $P=100$ lbs., the lateral pressure is $1/2P$. This makes the system stable.

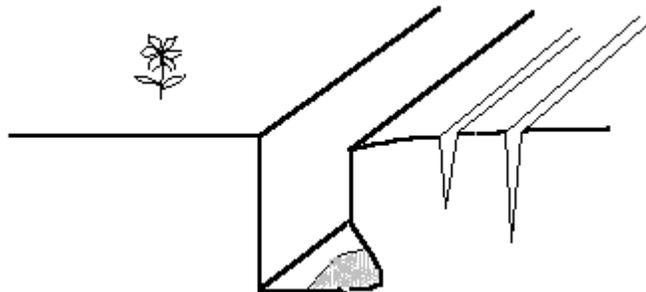


When a trench is cut, the system becomes unstable and the Earth starts to move into the trench. Cracks start to form in the surface about 1/3 to 2/3 of the depth of the trench back from the edge and may be 1/2 the depth of the trench, (when water fills these cracks, the faster things start to go wrong). The next

thing to happen is the lower part of the trench wall fails because of the great stress of the soil above it.

Someone caught in a cave-in up to his shins can have about 100 lbs. on each foot.

If the soil is wet you could have the suction effect created by mud and water (like when you lose a shoe in the mud) the suction can be as much as 750 lbs. for each of your feet depending on the water content and the soil type. This is how you can be trapped in a 12 inch cave-in. This is where the most dangerous part of a cave-in occurs. You now have unstable soil hanging and ready for a second cave-in, which will happen all by itself. This is also when the



would-be rescuer jumps in the ditch to save his buddy, just in time for the second cave-in, and there will be a second cave-in because the Earth is trying to heal itself. Sixty percent of all cave in deaths are rescuers. If the second cave-in doesn't happen right away, the next thing that happens is the rescuer starts shoveling dirt out of the way so more dirt can cave-in, he is shoveling away the dirt that is holding back the next cave-in. There could be 2, 3, 4 or even more cave-ins in one trench. If the first one doesn't get you, the second one might, if not, the third one is always a possibility

Certain conditions will affect a trench wall and may cause the cave-in to occur or occur in a faster or more severe way. Water in the ditch or in the cracks that develop will make the ground extremely unstable. The water source could be rain, ground water, run-off, broken water line, or any other source. Vibration will increase the instability of the soils. Vibrations can come from nearby roads, equipment and machinery, changes in traffic must be monitored. Changes in soil types and conditions will affect the safety of the trench. While trenching you may come across previously disturbed soil, or the type of soils could change from clay to sand, and water content may increase or the soil may just dry out while the ditch is open.

This is what a trench is, how a cave-in occurs, and what typically happens during a cave-in. So don't jump in a ditch or open trench to help your buddy. Get help, keep people and machinery away from the edge of the trench, it is very unstable, stop any vibrations and stay calm.

OSHA says;

Trenches that are more than 20 feet deep must be designed by a professional engineer.

Trenches 5 to 20 feet must be monitored by a competent person at least once a day and whenever conditions change. This person must be able to recognize and determine the different types of soil and recommend the appropriate sloping, shoring, or shielding method to be used. This person must also have the authority to stop work when hazardous conditions arise and correct the hazard so work can resume.

A ladder, stairway, or ramp must be provided in trenches that are 4 feet or more in depth, and require no more than 25 feet lateral travel for employees. Atmospheres will be tested in excavations greater than 4 feet before employees enter (oxygen content must be at least 19.5% and not more than 23.5%). Spoils piles will be kept at least 24 inches from the edge of the trench. Barriers will be installed and signs posted around the trench, ditch or hole.

There are four basic classifications of soil and their recommended sloping angles.

- | | |
|----------------|-------------------------|
| 1. Solid Rock | 90 Degrees or vertical |
| 2. Type A Soil | 53 Degrees or 3/4 : 1 |
| 3. Type B Soil | 45 Degrees or 1: 1 |
| 4. Type C Soil | 34 Degrees or 1-1/2 : 1 |

Forget about solid rock and Type A soils. The competent person has been trained to determine soil types by a couple of field tests. If any questions arise as to the type of the soil or a competent person is not available, treat the soil as the less stable of use Type C.

Warning Signs of Trench Wall Failure

- tension cracks
- ground settlement
- changes in wall slope or wall bulge
- increase in strut loads
- spalling or sloughing of soils
- excessive seepage and piping of fine soils
- softening of sidewalls
- boiling of trench bottom
- creaking or popping sounds
- visual deformation of bracing system or trench

Always call the Ohio Utilities Protection Agency two working days before you dig (1-800-362-2764). If possible mark the proposed excavation with marking paint. OUPS will call the required utilities and they will mark their own utilities.

electric is red

gas/oil is yellow

communication is orange

water is blue

sewer is green

If a utility company says their line is dead and it has to be cut, let them cut it.

HAZARDOUS CHEMICALS AT THE PULP MILL SAFETY MEETING

REMEMBER!

First aid for any chemical contact - do the following until medical help arrives;

1. get to fresh air
2. flush skin and eyes with plenty of water
3. if victim is not breathing, give artificial respiration
4. never give anything by mouth to an unconscious person
5. douse flames with water only

SODIUM HYDROXIDE - NaOH (also called "caustic" or "lye")

- Properties:** White, crystalline powder. Nonflammable. Becomes colorless when dissolved in water. Slippery to the touch.
- Where used:** Used for pH adjustments in the bleach plant and used in the scrubber to neutralize chlorine. Also one of the main active ingredients in white liquor. Purchased in railcars as a 50% solution (half NaOH, half water). It is stored in the mill in 50% and 5% concentrations.
- Reactivity:** NaOH is a strong base which will react violently with acids and certain metals.
- Health Hazards:** Causes severe burns to the skin and eyes. Ingestion causes internal injury and can cause death.
- First Aid:** Wash skin or eyes with plenty of water immediately. Do not rub skin. If ingested, do not induce vomiting. Give water to drink. Get medical assistance.
- Protective Gear:** Goggles, rubber gloves and apron, rubber boots, face shield.

DREW 6123

- Properties:** Pale yellow liquid with a pungent odor. Nonflammable.
- Where used:** Used to destroy residual chlorine dioxide after the "D" bleach stage. Purchased and stored as a liquid in a bulk tank.
- Reactivity:** Hazardous polymerization cannot occur. Very stable. avoid contact with strong oxidizing reagents.
- Health Hazards:** Over exposure can cause eye irritation, skin burns, irritation of nasal and respiratory passages. Sulfite-sensitive people who inhale or ingest this product may experience a severe allergic reaction. Swallowing can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- First Aid:** Wash exposed skin with soap and water. If eyes are exposed, flush with large amounts of water for about 15 minutes. If swallowed, drink two glasses of water and induce vomiting by giving IPECAC syrup or by placing finger at back of throat. If inhaled, remove individual to fresh air. If breathing has stopped, give artificial respiration. Keep individual warm and quiet and get medical attention.
- Protective Gear:** Respirator (NIOSH/MSA approved) and rubber gloves. If a liquid leak is suspected, use chemical splash goggles and a face shield.

HYDROGEN PEROXIDE - H2O2

- Properties: Colorless liquid. Looks like water. Slight odor. Nonflammable.
- Where Used: Used in the Bleach Plant to bleach pulp at the "E/O" stage. Purchased and stored in 50% concentrations. Diluted to 5% concentrations before adding to pulp stream.
- Reactivity: A strong oxidizer. Reacts violently with flammable solids such as wood, oil, grease, leather, and cotton. Will also react with copper, certain other metals, dust, and finely divided materials. Hydrogen peroxide which has dried onto flammable materials such as wood, leather or cotton can ignite unpredictably.
- Health Hazards: Contact with eyes can cause burns and blindness. Inhalation of mist can cause irritation to nose and throat. Contact with skin will cause burns, sometimes with delayed effects. Ingestion can cause internal injury. The higher the concentration, the greater the injury.
- First Aid: Flush eyes and skin with plenty of water immediately. If swallowed, do not induce vomiting. Get medical assistance.
- Protective Gear: Goggles, rubber gloves and boots.

CHLORINE - Cl2

- Properties: Greenish-yellow gas with a irritating odor. Nonflammable.
- Where Used: Used in the Bleach Plant to bleach the pulp in the "C" stage. Purchased and stored as a liquid in pressurized railcars. Removed from a railcar by pad, then vaporized and mixed with pulp stream.
- Reactivity: Reacts with water to form hydrochloric acids. Contact with oil, grease, or other fuel will cause fire.
- Health Hazards: Contact causes severe irritation to eyes and respiratory tract. Prolonged inhalation at high concentrations causes death. Liquid chlorine will freeze skin.
- First Aid: Get to fresh air immediately. Water can be used to flush skin and eyes. If breathing has stopped, give artificial respiration. Get medical assistance.
- Protective Gear: Respirator (Either canister type or SCBA, depending on concentrations) and rubber gloves. If a liquid leak is suspected, use goggles or a face shield.

CHLORINE DIOXIDE - ClO2

- Properties: Greenish-yellow gas with a pungent, irritating odor.
- Where Used: Used in the Bleach Plant to bleach pulp in the "C" and "D" stages. Manufactured on site in the R3 plant and stored in a cold water solution.
- Reactivity: A strong oxidizer. Will react violently with fuels like grease or oil and cause fire. Chlorine dioxide gas is very sensitive to increases in temperature, pressure and concentration and may decompose violently. Reacts to moisture to form acids.
- Health Hazards: Contact causes severe irritation to eyes and respiratory tract. Prolonged exposure at high concentrations causes death.
- First Aid: In case of eye or skin contact, flush with plenty of water. If inhaled, get to fresh air immediately. If breathing has stopped, give artificial respiration. Get medical assistance.
- Protective Gear: Respirator (either the canister type or SCBA, depending on the concentration), rubber gloves and goggles.

SODIUM CHLORATE - NaClO₃

- Properties: White crystals. Colorless when dissolved in water. Odorless.
- Where Used: Used in the R3 Plant to manufacture chlorine dioxide. Purchased as a dry crystal. Mixed with water on-site and stored as a 46% solution.
- Reactivity: A strong oxidizer. Dry crystals ignite readily in the presence of sparks or friction or upon contact with acids. Sodium chlorate solution which has dried onto flammable material such as wood, leather, or cotton will ignite unpredictably and burn violently. Flames are hard to extinguish.
- Health Hazards: Non-toxic unless ingested in large amounts. Do not allow sodium chlorate to dry on clothing or skin.
- First Aid: Fight fires with water only. Remove contaminated clothing immediately and flush skin with plenty of water. Get medical assistance.
- Protective Gear: Rubber boots and gloves, face shield. Polyester clothing is preferred over wool or cotton.

SULFURIC ACID - H₂SO₄ (also called “oil of vitriol”)

- Properties: Colorless to pale yellow liquid with a slight odor. Nonflammable.
- Where used: Used in the R3 Plant to manufacture chlorine dioxide. Purchased and stored in concentrated form.
- Reactivity: Highly corrosive. reacts violently with water, organics, finely divided metals, concentrated bases and dry chlorates. Decomposition can generate explosive concentrations of hydrogen gas.
- Health Hazards: Will severely burn skin and eyes. Inhalation of fumes will cause respiratory irritation and burning. Ingestion causes burns to throat, mouth, and stomach.
- First Aid: Flush skin and eyes with plenty of fresh water. Get to fresh air. If breathing has stopped give artificial respiration. Get medical assistance.
- Protective Gear: Rubber gloves, apron, boots, and goggles.

OXYGEN - O₂

- Properties: Colorless, odorless gas. Pale blue, odorless liquid. Nonflammable.
- Where Used: Used in Bleach Plant to bleach pulp in the “E/O” stage. Purchased and stored as a pressurized liquid. Oxygen is vaporized before being mixed with the pulp stream.
- Reactivity: A strong oxidizer. Will support and vigorously accelerate combustion.
- Health Hazards: Liquid will freeze skin. Inhalation of concentrated oxygen for prolonged periods may cause chest pain, coughing, dizziness, and confusion.
- First Aid: In case of skin or eye contact with liquid oxygen, flush with plenty of water. In case of inhalation, get to fresh air. Get medical assistance.
- Protective Gear: Rubber gloves and goggles. Respiratory protection (SCBA or canister) required in high concentrations.

HYDROGEN SULFIDE - H₂S (also called “sewer gas”)

Properties: Colorless gas. Has a pungent, “rotten egg” odor at low concentrations, but is odorless at high concentrations.

Where Used: Purchased in cylinders. Used in small quantities in laboratories to calibrate monitors and instrumentation. Also found in sewers where decomposition of waste is taking place or where, for example black liquor (containing sulfur) contacts acid (containing hydrogen).

Reactivity: Explosive at high concentrations.

Health Hazards: Highly toxic at high concentrations. Hydrogen sulfide attacks the olfactory nerve and will deaden a person’s sense of smell immediately. Death can occur with the first breath. Low concentrations will result in irritation, headaches, nausea and dizziness.

First Aid: Get to fresh air. If breathing has stopped, give artificial respiration. Get Medical assistance.

Protective Gear: Respiratory protection (canister or SCBA).

FIRE SAFETY SAFETY MEETING

LOCATION OF EXITS, FIRE EXTINGUISHERS, AND PHONE

In case of a fire you need to stay calm and know how to exit the building. That means if there is more than one way out, you need to know where they are. Have at least one alternative in case your first choice is blocked. You need to know where the fire extinguishers are located and how to use them, also you need to know where the telephone is located and the number to call the fire department (if it is not 911), the address, and any other information you can offer (i.e. type of fire, what floor of the building, and if anyone is hurt.)

THE THREE THINGS NEEDED TO START A FIRE

Fuel-Heat-Oxygen

Almost every construction site has all three.

Piles of wood scraps, paper, demolition debris are fuel that accumulate daily.

Heat source are also present on site. Torches, matches, and cigarettes tossed on the floor, space heaters are all familiar items on a jobsite.

Oxygen is the third element necessary for a fire to start and it is in the atmosphere.

FIRE CLASSIFICATIONS

Class "A" Fires - Consume combustible materials such as wood, cloth, and paper. These fires can be extinguished with water or solutions that are mostly water because the water is absorbed by these materials and this cools the burning materials below their ignition level. Use a Class "A" or "ABC" extinguisher or water that smothers the flames.

Class "B" Fires - Flammable or combustible liquids or greases such as gasoline, diesel fuel and lacquer thinner. These types of fires must be extinguished by smothering or blanketing effect of an oxygen excluding method of a dry chemical extinguisher of a Class "B". Do not use water on these types of fires because will splash.

Class "C" Fires - Energized electrical equipment. These fires must be extinguished with a medium that does not conduct electricity. For extinguishing these types of fires use a Type "C" extinguisher which uses carbon dioxide. Do not use water! Electrocutation is possible!

Class "D" Fires - Combustible Metals. Fire extinguishers for Class "D" fires use a dry compound. Every Class "D" fire is unique and the extinguisher will state what metals it will work on.

you can use an "ABC" or multi-purpose extinguisher on any of the first three types of fires but not on a Class "D" fire.

GENERAL RULES FOR USING MOST EXTINGUISHERS

1. Use the extinguisher in the upright position (there are no more of the old invert and spray types).
2. Start the discharge of the extinguisher eight feet from the fire, with the wind at your back if possible.
3. Attack the fire as you advance.
4. Work quickly, extinguishers empty in about one minute.
5. If you are outside, be prepared to move if there is a change in the wind direction.
6. If you are inside you may be on your knees with your head no higher than the extinguisher because of the smoke. The best air to breathe is between your knees and the floor. If the smoke is that bad, get out!
7. With water type extinguishers, direct the stream at the base of the fire and move forward.
8. With a dry chemical extinguisher, attack the nearest edge of the fire (but no closer than 8 feet) and walk forward using a sweeping motion.
9. When using carbon dioxide extinguishers, use a sweeping motion. Start at the near edge and move forward.
10. When two or more persons are fighting a flammable liquids fire, they must work together from the same side of the fire and make sure it does not re-ignite between them.

FIRE ALARMS

Know where the phones are located and the proper emergency number to call. If the jobsite has a fire alarm system, know where the alarm boxes are located and how to turn in an alarm.

FIRST AID KITS

First aid kits should be available as well as someone with a valid first aid training certificate.

CUTTING AND WELDING

Number one cause of construction fires. Take all adequate precautions. Inspect the area after using a torch or flame. Cover flammable materials if you have to work near them. Be aware of what is around you (i.e. explosives, vapors, flammables and people you might burn.)

TEMPORARY HEATERS - (space heaters)

Care will be used in the location of space heaters. They will be kept clear of flammable materials, placed on level, stable ground, not set up on scaffolds.

FLAMMABLE LIQUIDS

Gasoline will be stored in approved safety cans with labels. Flammable liquid spills will be cleaned up immediately. Gasoline engines will be shut off during refueling. Powder-actuated tools will not be kept in flammable atmospheres or near flammable liquids.

RUBBISH DISPOSAL

Piles of rubbish and construction debris shall be disposed of regularly and safely (dumpsters). Oily and paint rags can spontaneously ignite and must be disposed of properly.

Never block or lock a doorway that is to be used as an exit in an emergency.

Never block access to a fire extinguisher or cover them from sight.

Learn not to burn!

DEMOLITION SAFETY SAFETY MEETING

These suggestions for job safety cannot possibly cover every situation. Each operation presents its own problems. These are only general safety rules.

BEFORE DEMOLITION

Prior to demolition operation, a competent person should make an engineering survey of the structure to determine the condition of the framing, floors, walls, and the possibility of an unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed to hazards should also be checked.

A check of the building contents should also be performed. Did the structure hold hazardous materials at one time? Is asbestos present in the building? If any hazardous materials are detected, the appropriate governing agency should be notified.

All gas, electric, water, steam, sewer, and other utilities should be shut off, capped or otherwise controlled outside the building before demolition starts. All utility companies involved should be notified in advance.

If it is necessary to maintain power, water or other utilities during demolition, such lines should be temporarily relocated as necessary and protected and identified.

The walls or floors should be shored or braced before employees are required to work within a structure to be demolished that has been damaged by fire, flood, explosion or some other cause.

- all windows, glass doors and other fragile fixtures should be removed.

- Conspicuously post emergency phone numbers at the jobsite.

- Post warning signs at intervals around the perimeter of the jobsite.

- Establish an organized wrecking procedure to prevent premature collapse of the building.

- Erect an adequate barricade around the affected area. This is prevent unauthorized personnel from entering the project.

- Wall and floor openings should be guarded to protect employees working within the structure.

BASIC SAFETY RULES

All employees shall be removed from areas directly below floors or similar elevations prior to the demolition of walls, sections of walls, chimneys or other parts of the building which may fall on such upper floors or elevations.

The area where material is being lowered to the ground should be barricaded.

Chutes shall be constructed so that material and debris cannot leave the chute before reaching the discharge end. Chutes shall be used whenever the drop is 20 feet or more.

Chutes will be constructed of materials strong enough to assure that side wall will not rupture. The chutes may be wood or metal lined, but their openings must be closed when not in use. Chute openings for inserting material shall not be more than 48 inches long. Open top chutes may be used when the angle of incline is less than 45 degrees.

Use baffles and a change of direction every two floors or stories.

Protect chute openings into which employees dump debris by a standard guardrail. When material is dumped by mechanical equipment or wheelbarrows, a 4 x 4 inch toeboard should be provided.

When existing elevators are used for removing debris, make sure they are not loaded beyond their rated capacity.

Openings cut in floors for the disposal of materials shall be no larger than 25% of the total floor area, unless shoring is installed to safely carry the intended load.

HAZARD COMMUNICATION PROGRAM

The OSHA Hazardous Communication Standard requires that employees be made aware of the hazardous chemicals to which they are exposed.

PERSONAL PROTECTIVE EQUIPMENT

Wear hard hats for protection from falling or flying objects, from physical contact with rigid objects, and from electrical shock and hair entanglements.

Wear a shirt at all times for protection from burns, abrasions, insect bites and lacerations.

Wear safety shoes on site, and keep them in good condition to ensure solid and secure footing.

Use proper safety eyewear and face protection when operating saws or other cutting or chipping tools.

Wear gloves that fit properly when there is a danger of burns, cuts, or other lacerations.

When working with chemicals that are harmful to the skin, wear glove of the substance recommended by the chemical manufacturer specified.

FALL PROTECTION SAFETY MEETING

OSHA requires employers to provide fall protection to its employees when they are required to be on a walking/working surface with an unprotected edge or side that is six feet (6') or more above a lower surface, dangerous machinery or vertical rebar (this also includes leading edge work, holes, and wall openings). This now applies to residential roofers and construction.

FALL PROTECTION:

1. Fall arrest system
 - a. anchorage - 5000 lb. strength
 - b. connectors
 - c. deceleration device
 - d. lifeline
 - e. body harness or beltOr a suitable combination of these. As of 1/1/98 no body belts and only locking snap hooks.
2. Guard rail system means a barrier erected to prevent employees from falling to lower levels.
3. Safety monitoring system uses a competent person who is responsible for recognizing and warning employees fall hazards.
4. Warning line system is a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge.

Guard rails systems - top rail shall be 42 inches +/- 3 inches above the walking/working surface. The midrails shall be installed halfway between the top rail and the lower surface. Screens of mesh when used must extend from the top rail to the walking/working level. When balusters are used they shall be no more than 19 inches apart. Guard rail systems shall be capable of withstanding, without failure, a force of at least 200 lbs. outward or downward. Guardrails shall not have splinters, nails, or any other protrusions that could snap workers or their clothing. Steel or plastic banding shall not be used as top rails. Mid rails or top rails shall not extend past the ends of the terminal supports. rope used as top or mid rails should be inspected to insure it meets the strength requirements. Safety nets shall be installed so when an object is caught in them, they will not make contact with the level below.

Personal fall protection - snap hooks must have a keeper and after 1/1/98 they must have a locking keeper. If you are using a non-locking snap hook you cannot hook ;
directly to webbing, rope, or wire rope
to each other
to a "D" ring that has another hook attached to it
to a horizontal lifeline
or to any object that is incompatible with its size or shape

Lanyards and vertical lifelines shall have a minimum breaking strength of 5000 lbs.

Anchorage used for attachment shall be dependable and capable of 5000 lb. loads. And rigged so that the employee cannot fall more than 6 feet nor hit the lower level. The attachment point of the body belt shall be located in the middle of the wearer's back. Fall protection components subjected to impact loading shall be immediately removed from service and not used again until inspected and determined to be safe. They shall be inspected before each use. Guard rails are not anchorage points for fall protection.

Warning line system - shall be erected around all sides of the roof work area. Warning line shall consist of ropes, wires, or chains and supports. The ropes shall be flagged at not more than 6 foot intervals with high visibility material. The rope shall be rigged so that the lowest point does not sag below 34 inches from the working/walking surface. The rope and supports shall be able to withstand a force of 16 pounds

Safety monitoring system - the employer will designate a competent person to monitor other employees and to warn them when they appear to be unaware of approaching a fall hazard or is acting in an unsafe manner. The monitor shall be on the same level as the employees, he shall be within communicating distance, he must be in sight of the employees at all times, he shall have no other responsibilities.
Employees shall be protected from falling objects by toeboards, screen, mesh, nets, or barricades

SAFETY MEETING LASER SAFETY

Definitions;

LASER - a device that contains a crystal, gas, or other suitable substance, in which atoms are stimulated by focused light waves, become amplified and concentrated, then emit them in a narrow and very intense beam. Lasers are measured in watts just as light bulbs are.

Laser is an acronym for **L**ight **A**mplification by **S**timulation **E**mission of **R**adiation

Lasers are divided into different classifications according to their ability to cause harm to eyes and skin. The lower the class number the lower the power rating.

class 1 is very low wattage

class 2 is also low power less than 1 milliwatt

class 3 moderate power

class 4 high power

Class 1 lasers are used in bar code scanners like they use in Big Bear and Kroger stores, also CD players use these low power lasers. They are incapable of causing harm.

Class 2 lasers are distance measuring, or the type the highway patrol uses. Class 2 is further divided into 2A and 2B. If you are required to look into the beam of a class 2B laser you should have anti-laser eye protection .

Class 3 lasers are also divided into 3A and 3B. 3A lasers are hazardous to eyes under direct viewing and requires eye protection. Class 3B lasers are hazardous to both eyes and skin. Used in medicine and industry. The laser we have is a low end 3B. That is the weakest of the 3B classification. Prolonged exposure to an average class 3B laser beam can cause eye discomfort to severe pain, and sunburn type skin burns.

Class 4 lasers are hazardous under all conditions and are also fire hazards. Used in industry for cutting and die making. Any exposure to class 4 lasers can cause blindness or severe burns to the skin.

We do not use class 4 lasers but you should be aware of the hazards in case you are asked to work in an area where lasers are being used.

The type of laser we use, the sight laser use a moderate powered lasers. Although we do not look into the beam of our laser because it is rotating and it is usually set up above or below eye level, common sense tells us we should try to avoid any eye contact The rules that are required for this and all lasers are:

There must be warning signs posted at all the entrances to the laser operating area.

Lasers must be turned off when left unattended for substantial periods of time.

Lasers shall not be directed at anyone at any time

Lasers shall have a label that indicates maximum power output.

SAFETY MEETING

LIFTING TECHNIQUES/AVOIDING BACK INJURIES

Sprains and strains are the most common causes of lower back pain. Your back can be injured by improper lifting of moderate to heavy objects, falling, auto accidents, and sports activities. But of these, lifting improperly is the largest single cause of back pain and injury. By knowing and using proper lifting techniques you help to prevent back pain and injuries.

Lower back problems and colds are two of the most common causes of lost work days and worker's compensation claims. In 1994 the Bureau of Labor Statistics reported 400,000 injuries from overexertion in lifting in 1992.

Although our backs hold up well, our lifestyles and activities can lead to back pain. Some things that could go wrong and lead to back pain are;

- Strains and sprains can result from injury to muscles and ligament that support the back, a torn ligament will result in severe pain.

- Ruptured or slipped disc is not uncommon and occurs when the disk (vertebral cushion) presses on a nerve.

- Chronic tension or stress can result in muscle spasms and aggravate persistent and painful backache. Other conditions such as pain "referred to the back" from other organs, such as kidneys and prostate can result in nagging back pain.

Why Back Pain Happens

Improper lifting techniques can lead to back injuries, but other factors can contribute to this problem.

Poor Posture

Whether you are standing, sitting or reclining, posture affects the amount of strain put on your back. The wrong posture increases the strain on the back muscles and may bend the spine into position that will cause trouble. When standing correctly the shoulders and back form a natural "S" curve over the pelvis. Good sitting posture should put your knees slightly higher than your hips. Your hips should be at the rear of the chair with your lower back not overly arched. Also your shoulders and upper back are not rounded. Reclining position is important too. Sleep on your side, knees bent, or sleep on your back. Sleeping on your stomach, especially on a sagging mattress with your head on a thick pillow puts too much strain on the spine which results in morning backache.

Poor Physical Condition

Your physical condition can lead to back pain if you are overweight, and especially if you have developed a pot belly extra strain on your back results. It is estimated that every extra pound up front puts 10 pounds of strain on your back. Proper diet and exercise is the sensible way to help avoid back problems.

Repetitive Trauma

Most people think back injuries result from lifting heavy or awkward objects. Many back injuries, do not come from a single lift, but occur from relatively minor strains over time. As a worker repeats a particular irritating movement, the minor injuries begin to accumulate and weaken affected muscles or ligaments eventually a more serious injury may occur (cumulative trauma disorders). Thus a specific weight lifted may actually have little to do with any single injury. Use help, mechanical aids with good lifting techniques.

Basics of Good Lifting

When it is necessary to load or unload by hand, knowing the proper way to lift can save you some back pain.

1. Size up the load - test the weight by lifting one of the corners.
2. Bend the knees - this is the single most important rule when lifting moderate to heavy objects.
 - center yourself over the load
 - bend your knees and get a good grip
 - lift straight up, smoothly
 - allow your legs, not your back to do the work
3. Do not twist or turn your body once you have made the lift - keep the load close to your body and keep it steady. Sudden twisting or turning may take out your back.
4. Make sure you can carry the load where you need to go before you attempt to move it. Check your path for obstacles or slippery areas.
5. Set the load down properly. Setting the load down is just as important as lifting it.
6. Always push, don't pull. Pushing puts less strain on your back and is safer should the load tip.

Planning Ahead

If you know certain loads will have to be carried, place the loads on racks or pallets or something other than the floor whenever possible. That way you do not have to lift from as far down or the load is up off the floor and easier to grasp. Do not attempt to carry loads that are clearly too heavy. When catching falling or tossed objects, your feet should be firmly planted, with your back straight and your knees slightly bent. Your legs should absorb the impact. If you must work on something low to the ground keep your back as straight as possible and bend your knees. If you must use your back, keep your knees bent and your back straight.

When a Serious Backache Happens

Most back pain goes away with simple care and bed rest, more serious back injuries will require treatment. If the pain does not go away, or is accompanied by weakness or numbness in the lower limbs, you should see your doctor. Pain that radiates from the back to the buttocks and legs is typical of lower back disorders and is sciatica. By using common sense, you can help keep your back out of trouble. Every time you think about lifting, think about your back and the possibility of back sprain. Follow good lifting techniques at work and at home, it's your back and your paycheck.

LEAD IN CONSTRUCTION

Lead has been used for many things for thousands of years and has been known to be a health hazard for hundreds of years. Archaeologists have found lead pigments on buildings constructed around 3000 B.C. The color is still easy to identify after 5000 years. So you can see why it was desirable to use in paint, it would last forever. But as early as 1840, France discouraged the use of lead in paint as a pigment. Lead was used for water piping for centuries, it is durable, workable, does not corrode, expands when freezes, does not readily crack due to building settling, and when it does burst, it is easily repaired. Lead is also found in food containers. The metal food can "the tin can" was patented in 1810. A solder was used for the side seam which contained 63% lead and 37% tin. During WWII there was a tin shortage and lead increased to 98%. In 1984 15% of all dietary lead exposure is from tin cans. Lead was used in pewter utensils, plates and platters. Lead is still used in lead crystal used in high quality glassware. Lead glazing is also still used for dishes.

Besides the painting and plumbing uses, lead can also be found in gutters, spouts, flashing, ornamental lead work such as cornices and moldings, stained glass. These are some of the ways you can be exposed to lead in your home. You can also be exposed to these same sources of lead in the construction field during repair, cleaning out and demolition of existing buildings.

Lead has been used as an ingredient of pesticides until recently. People regularly keep these things on shelves in the garage for years. Besides the lead from these pesticides is still in the soil of orchards and your lawn.

Lead in drinking water is also common. Lead solder was used for years to seal joints. The major source of lead in drinking water comes from the plumbing system itself. Lead is also found in brass and bronze used for faucets, fittings, and fixtures and valves, water meters and other devices.

Although lead in gasoline was phased out during the 1980's it was added to gasoline from the 1920's. About seven million metric tons was used during that period.

Other major uses of lead in the U.S.

- white lead for paint
- red lead for paints and ceramics
- gasoline additives
- storage batteries
- cable coverings
- ammunition
- solder
- caulking

Over the past twenty years the Federal government has taken a number of regulatory actions to reduce risks connected with human exposures to lead. The use of lead in house paint and in the solder and pipes used in drinking water systems has been banned. The phase-out of lead solder in food cans has also been encouraged. The EPA has taken action to remove lead additives from gasoline and set new standards for drinking water. Although most of these practices are no longer using lead, the lead still remains in pipes, paint on houses, batteries, and in the soils just to name a few.

Toxic substances can enter the body through three pathways

dermal absorption-through the skin

ingestion-swallowing

inhalation-breathed in through the nose or mouth (fumes or dust)

The effects of hazardous material exposure depend on the concentration of the chemical, how long the worker remains exposed, and the chemical nature of the hazardous material. An **acute effect** is a severe immediate reaction, usually after a single large exposure (the solvent perchloroethylene can cause dizziness, nausea, and at high doses, coma and death). **Chronic effects** have latency periods, which may take days, months, or years to show up. For instance, asbestos causes lung disease over a period of many years.

The acute or short term effects of lead overexposure.

lead is a potent, systemic poison. Taken in large enough doses, lead can kill you in a matter of days.

A condition affecting the brain called acute encephalopathy may arise which then quickly develops into seizures, coma and death from cardiorespiratory arrest. Encephalopathy is highly unusual, but may occur with massive exposure. Systems and susceptibility to lead poisoning are widely varied from person to person.

The chronic or long term effects of overexposure

may result in severe damage to your blood forming, nervous, urinary and reproductive systems. Some common chronic symptoms of chronic exposure include: loss of appetite, metallic taste in mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors or numbness, dizziness, hyperactivity and coma. Chronic overexposure to lead also results in kidney disease with a few if any symptoms. It impairs the reproductive system of men and women and causes a decrease in sex drive, impotence and sterility in men. There is a risk of birth defects, miscarriage, and still birth. Children born to parents with chronic overexposure to lead are more likely to have birth defects, mental retardation, behavioral disorders, or die during their first year of life.

This is where you will find lead in your lives how it enters your body and what it will do to you if you are overexposed to it.

We have equipment to determine what your exposure level is and we know what to do to protect you from overexposure. What you need to recognize is when you are exposed to lead dust or vapors in the event that we do not foresee any exposure. There are many things you can do on a regular basis that will not harm you. The types of things you need to be concern about are long term concentrations to small amounts of lead exposure and/or short term exposure to large amounts of lead.

Ingle-Barr will initially determine if any employee may be exposed to lead at or above the action level by collecting samples of the air you are breathing. IBI will protect you if the level of exposure comes anywhere close to the action level with appropriate respiratory protection, clothing, change areas, washing facilities, and training. You will be notified before you are going to be exposed to any lead how you will be exposed and how you will be protected from overexposure. No employee will consume food, drink, tobacco products, apply cosmetics in any area in which lead exposure is possible.

If you are going to be involved in an ongoing lead abatement job or exposed to lead above the permissible exposure limits for any period of time, IBI will take an initial blood lead sample to determine what your existing level is and again every 2 months for analysis. You will be notified within 5 days of the results. If you reach a certain level of lead in your blood you will be removed from the work involving the exposure until those levels are at level OSHA has determined is normal (all the levels OSHA has set are well below any dangerous levels). IBI will also keep these records for 5 years.

tell story about the Toronto lead abatement project

The most important thing you can do for your families if you are exposed to lead is to clean yourself before you get in your car or go in your house. Lead dust in your clothes is transferred to your furniture and carpet and is nearly impossible to clean. You need to wash your hands and face before eating or smoking. You need to know where lead is and if you are being exposed. Kids are very susceptible to the effects of lead, because their bones and bodies are developing and are very sensitive.

DRIVER SAFETY

OSHA doesn't have too much to say about vehicle safety, they tend to leave that up to law enforcement. They do however address things like backup alarms on vehicles with obstructed view to the rear, chocking wheels when parking on inclines, this is not only for cars and trucks but equipment as well. They are also concerned about vehicles traveling on unstable ground where the vehicles could overturn, or cave in and fall into an excavation, raising the bed of a dump truck into a power line, refueling with a cigarette in your mouth, transporting explosives or compressed gas cylinders (upright and secured). They are also concerned about pinch points and swing radius on equipment. MSDS sheets for the chemicals you have on your vehicles. There are other things that OSHA is concerned about that are specific to certain types of vehicles and operations that we are not involved with, and maybe a few more that I have missed here. These are not the things I want to discuss today although I mention them because they are important.

I don't want to talk too much about laws because you should know what they are to have a driver's license, but I have seen delivery people from the Garden Center go the wrong way down a one way alley just to save a few seconds. There are other small infractions that go on all the time but the law will get you soon enough.

I do want to talk about how you operate the vehicles you drive for the company how you load them and some of the things you need to know to operate them safely. If you have a truck that you drive all the time you know about how often it uses a quart of oil and other fluids or if there is a slow leak in one of the tires. Point is, you check these items every so often so these things don't get away from you or you should be checking them. If you don't have a truck that you drive all the time you should be checking a few things every time you get in one (not only for the safety of the truck but for your safety as well). The least of the things you should check before you drive a company vehicle are;

Battery, oil, anti-freeze, brakes fluid, horn, lights, mirrors, tires, wipers, safety equipment (1st aid, fire extinguisher), look at the tools or items in the back to make sure they are secure. You should also check these items that are on any trailer that you are towing.

If you find anything wrong with your vehicle you should tell Dave Weller, he is the person who will schedule it for repair. If you tell the office it may not get to Dave. When you are inspecting your vehicle you should walk around it and look for puddles and leaks. Use your eyes, ears, and nose to inspect your vehicle. You are the one who drives the vehicle and the one to notice that something is broken or is wearing out. You are responsible for telling someone about it.

If you load cargo wrong or do not secure it, it can be a danger to others and yourself. Loose cargo that falls off a vehicle can cause traffic problems and others could be hurt and killed. Loose cargo could hurt or kill you during a quick stop or crash. Your vehicle could be damaged by an overload. Steering could be affected by how a vehicle is loaded, making it more difficult to control the vehicle. Whether or not you load and secure the cargo yourself, you are responsible for inspecting your cargo, recognizing overloads and poorly balanced weight, and knowing your load is properly secured. In order for you to know if your truck is overloaded, you will need to know a few definitions.

1. Gross Vehicle Weight (GVW) - The total weight of a single vehicle plus its load.
2. Gross Vehicle Weight Rating (GVWR) - The maximum GVW specified by the manufacturer for a single vehicle plus its load.
3. Tire Load - the maximum safe weight a tire can carry at a specified pressure. This rating is on the side of the tire.
4. Coupling Device Capacity - Trailer hitches are rated for the maximum weight they can pull or carry.

Overloading can have bad effects on steering, braking, and speed control. Overloaded trucks have to go slow upgrades. Worse, they may gain too much speed on downgrades. Stopping distances increases. Brakes can fail when forced to work too hard. During bad weather or in hilly country it may not be safe to operate at maximum legal loads.

The height of a vehicle's center of gravity is very important for safe handling. A high center of gravity means you are more likely to tip over. It is most dangerous in curves or if you have to swerve to avoid a hazard. It is very important to distribute the cargo so it is as low as possible. Put the heaviest parts of the cargo under the lightest parts.

Poor weight balance can make vehicle handling unsafe. Too much weight on the steering axle can cause hard steering and cause damage to the steering axle, brakes and tires. Under loaded front axles caused by the load too far back can make steering axle too light to steer safely. Too little weight on the driving axles can cause poor traction causing the tires to spin especially bad in poor weather. Weight that is loaded so there is a high center of gravity causes greater chance of rollover. on flat bed vehicles, there is also a greater chance that the load will shift and fall off causing damage to the load or personal injury.

Securing the Load Blocking is used in the front, back, and/or sides of a piece of cargo to keep it from sliding. Cargo must be secured to keep it from falling off. Tiedowns are used to prevent cargo shifting that may affect handling of the vehicle. Tiedowns must be of the proper type and proper strength. The combined strength of all cargo tiedowns must be able to lift one and one half times the weight of the piece of cargo tied down. Proper tiedown equipment must be used, including ropers, straps, chains, etc. Tiedowns must be attached to the vehicle or trailer correctly (hook, bolt, rails, rings). No matter how small the load you should have at least two tiedowns holding it. There are two reasons for covering cargo, (1) to protect people from spilled cargo, and (2) to protect the cargo from the weather.

Loads that extend over the end of a truck bed 4 feet or the sides by 4 inches must be flagged with a red flag at least one square foot in area.

ELECTRICAL SAFETY MEETING

Electricity has long been recognized as a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires and explosions.

Experts in electrical safety have traditionally looked toward the widely used NEC for help in practical safeguarding of persons from these hazards. OSHA has also recognized the importance of the NEC in defining basic requirements for safety in electrical installations. In 1971 they included the entire NEC into the OSHA 1926 standard by reference. In 1986 they sat down and picked out the items from the NEC that they wanted and left the others out, thus making the document simpler and easier to read and understand.

The first couple of paragraphs of the standard say:

1. all electrical conductors and equipment shall be approved.
All electrical equipment must be inspected to insure it is free from recognized hazards that are likely to cause death or serious injury. Safety of the equipment will be determined by the following:
 - a.) suitable equipment for the application
 - b.) mechanical strength and durability
 - c.) electrical insulation
 - d.) heating effects under use
 - e.) arcing effects
 - f.) classification by type, voltage, current capacity and specific use
 - g.) other factor that contribute to the practical safeguarding of employee who use or are likely to come into contact
2. Guarding-live parts of electrical equipment operating at 50 volts or more must be guarded against accidental contact by one of the following methods
 - a.) located in a cabinet, room, vault, or similar enclosure accessible only to qualified persons.
 - b.) use of permanent, substantial partitions or screens to exclude unqualified persons.
 - c.) located on a suitable balcony, gallery, or platform elevated and arranged to exclude unqualified persons.
 - d.) elevation of eight feet or more above the floor.

Entrance to rooms and other guarded locations must be marked with warning signs forbidding unqualified persons from entering, plus equipment must be marked w/appropriate caution signs.

Electric installations that are over 600 volts and that are open to unqualified persons must be made with metal-enclosed equipment or vault or area controlled by a lock, and be marked w/signs.

3. Conductors must be protected by from overcurrent in accordance with their ability to safely conduct current and be sized to handle the current. Fuses and circuit breakers must also be located or shielded that employees not be burned or otherwise injured by their operation e.g. arcing
4. Grounding of equipment connected by cord and plug-exposed noncurrent-carrying metal parts of cord and plug connected equipment that may be energized must be grounded.
 - a.) when in a hazardous location
 - b.) when operated at 150 volts to ground (except for guarded motors and metal frames of electrically heated appliances).
 - c.) when one of the following types of equipment is used
 - 1.) hand held motor-operated tools
 - 2.) cord and plug connected equipment used in damp or wet locations or by employees standing on the ground or on metal floors or working inside metal tanks or boilers.
 - 3.) tools likely to be used in wet and or conductive locations
 - 4.) portable hand lamps

Exception - tools that are double insulated, but they must be marked they are dbl. insulated.

If installation of electrical equipment (lighting, power, etc.) is made in accordance with the NEC it will be considered to be in compliance with the OSHA standard for: ground fault protection, protection of lamps on temporary wiring, suspension of temporary lights by cords, extension cord set and flexible cords.

Protection of Employees

The employee is not permitted to work near any part of an electric power circuit that the employee could contact in the course of work, unless the employee is protected against shock by de-energizing the circuit and grounding it by or guarding it effectively by insulation or other means.

Where the location of underground electric power lines is unknown, employees using jackhammers or hand tools that may contact a line must be provided with insulated protective gloves. Before work is begun it must be determined by inquiry (call OUPS), observation, or the use of instrumentation where the underground utility is located. The employee needs to know the location of such utilities, the hazards involved, and the means of protection needed.

Lock/out and tag/out

Must be used when doing maintenance on circuits and equipment.

GROUND-FAULT PROTECTION ON CONSTRUCTION SITES

INSULATION AND GROUNDING

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor. Grounding may be achieved through the use of a direct connection to a known ground such as a metal cold water pipe.

Consider, for example, the metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring. However, there is a hazard associated with housings and enclosures. A malfunction within the equipment-such as deteriorated insulation-may create an electrical- shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard. If a "hot" wire contacts a grounded enclosure, a ground fault results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to g-round. This wire is called an equipment grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user's knowledge.

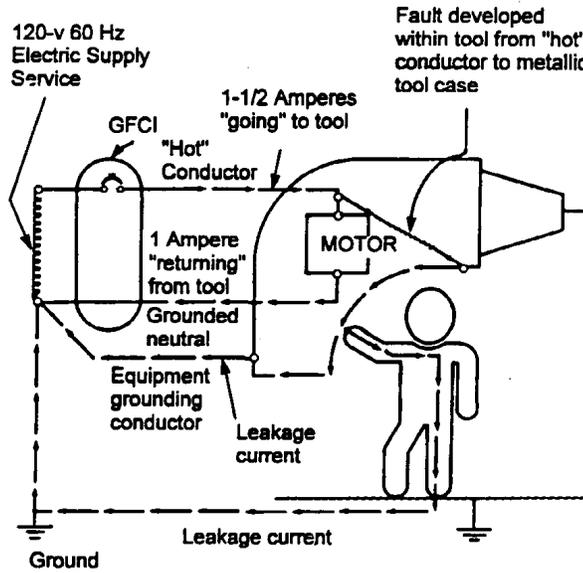
Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

The use of a ground-fault circuit interrupter (GFCI) is one method used to overcome grounding and insulation deficiencies.

WHAT IS A GFCI?

The ground-fault circuit interrupter (GFCI) is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second. (See diagram.)

Ground-Fault Circuit Interrupter



GFCI monitors the difference in current flowing into the "hot" and out to the grounded neutral conductors. The difference (1/2 ampere in this case) will flow back through any available path, such as the equipment grounding conductor, and through a person holding the tool, if the person is in contact with a grounded object.

PREVENTING SILICOSIS

Early Deaths From Dust

- **42 year old construction worker in Pennsylvania**
- **37 year old construction worker in Ohio**
- **49 year old construction worker in Oklahoma**
- **41 year old construction worker in Indiana**
- **44 year old construction worker in North Carolina**
- **39 year old construction worker in Ohio**

What is Silica?

Crystalline silica is the basic component of sand, quartz and granite rock. It is the most common mineral in the earth's crust. Airborne crystalline silica occurs commonly in both work and non-work environments. The most severe exposures to silica dust result from sandblasting to remove paint and rust from stone buildings, metal bridges, tanks and other surfaces using silica sand. Other activities that result in high exposure to silica dust are: chipping, hammering, and drilling rock. Crushing, loading, hauling and dumping rock. Abrasive blasting of concrete regardless of blast media used. Sawing, hammering, drilling grinding, and chipping of concrete or masonry. Demolition of concrete and masonry. Dry sweeping or pressurized air blowing of concrete, rock, or sand dust. mixing of concrete.

What is Silicosis?

Silicosis is a permanent lung disease. It is a scarring and hardening of the lung tissue caused when particles of crystalline silica are inhaled and become embedded in the lung. Silicosis is one of the oldest known occupational diseases, dating back to ancient Greece. Since the 1800s, the silicotic health problems associated with crystalline silica dust exposure have been referred to under a variety of names, including consumption, ganister disease, grinders' asthma, grinders' dust consumption, grinders' rot, masons' disease, miners' asthma, miners' phthisis, potters' rot, sewer disease, stonemason's disease, chalicosis, and shistosis.

Silicosis is the result of the body's response to the presence of silica dust in the lungs. The respirable particles or the dust small enough to enter the lungs can penetrate to the innermost parts of the respiratory systems. These are the alveoli (or airsacs) where the exchange of oxygen and carbon dioxide occurs. When workers inhale silica dust, they land on the alveoli, and white blood cells try to remove them. The dust particles are embedded. The lung tissue develops nodules and scarring around the trapped silica particles.

Formation of large numbers of "scars" following prolonged exposure causes the surface of the lungs to become less elastic and decreases the capacity of the lungs. This is noticed as shortness of breath following exertion.

Symptoms seldom develop in less than five years and in many cases may take more than 20 years to become disabling or cause death.

Workers may develop any of three types of silicosis:

- Chronic silicosis, which usually occurs after ten or more years of exposure to crystalline silica at relatively low concentrations.
- Accelerated silicosis which results from exposure to high concentrations of crystalline silica and develops five to ten years after the initial exposure.
- Acute silicosis, which occurs where exposure concentrations are the highest and can cause symptoms to develop within a few weeks to four or five years after the initial exposure.

Initially, workers with silicosis may have no symptoms. As silicosis progresses, there may be difficulty in breathing and other chest symptoms such as cough. Infectious complications may cause fever, weight loss, and night sweats. Severe mycobacterial or fungal infections can complicate silicosis and may be fatal. Fungal or mycobacterial infections are believed to result when lung cells that fight these infections are overwhelmed with silica dust and are unable to kill mycobacteria. Medical evaluations of silicosis victims usually show the lungs to be filled with silica crystals. Furthermore, evidence indicates that crystalline silica is a potential cancer-causing carcinogen.

What Can Employees Do To Limit Their Exposure To Crystalline Silica?

The key to silicosis prevention is to prevent dust from being in the air. OSHA requires dust to be controlled whenever possible. A simple control may work, like a water hose to wet the dust down at the point of origin. Here are some steps to take to protect yourself:

- Employers are required to provide and assure the use of appropriate controls for crystalline silica dust. Be sure to use all available engineering controls such as water sprays and ventilation of contaminated structures. Substitution of less hazardous materials can be used.
- Be aware of the health effects of crystalline silica and that smoking adds to the damage.
- Know the work operations where exposure to crystalline silica may occur.
- Participate in any air monitoring or training programs offered by the employer.
- Use type CE positive pressure abrasive blasting respirators for sandblasting.
- For other operations where respirators may be required, wear a respirator approved for protection against crystalline silica dust. Do not alter the respirator in any way. Workers who use tight fitting respirators cannot have beards/mustaches which interfere with the respirator seal to the face.
- If possible, change into disposable or washable work clothes at the worksite: shower when possible, and change into clean clothing before leaving the worksite.
- Do not eat, drink, use tobacco, or apply cosmetics in areas where there is dust containing crystalline silica.
- Wash hands and face before eating, drinking, smoking or applying cosmetics.
- Post warning signs and rope off areas of exposure.
- Clean up before going home, don't take this stuff home to our families.

Emergency First Aid

- Eye Exposure-if crystalline silica dust gets into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. If irritation is present after washing, get medical attention.
- Breathing-If a person breathes in large amounts of crystalline silica dust, move them to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.
- Rescue-Move the affected person from the hazardous exposure. If the person has been overcome, notify someone else and put into effect established emergency rescue [procedures. Do not become a casualty.

Spill and Disposal Procedures

- Persons not wearing protective equipment and clothing should be restricted from areas of spills or releases until clean-up has been completed.
- If crystalline silica has been released in hazardous concentrations, the following steps should be taken”
 1. Ventilate the area
 2. Collect spilled material in the most convenient and safe manner for reclamation or for disposal in a secured sanitary landfill.
- Waste disposal-crystalline silica may be disposed of in a sanitary landfill.

Warning Signs

Warning signs should be posted to mark boundaries of work areas contaminated with crystalline silica. These signs should warn workers about the hazard and specify any protective equipment required (goggles or respirators).

OSHA Special Emphasis Program

OSHA has targeted silica exposure for inspection because of the widespread use of the material, the number of related deaths and exposed workers, and silica’s health effects.

Electronics, foundries ceramics clay pottery, construction, agriculture, mining, railroad track setting, stone quarry, manufacturing of abrasives, soaps and detergents are soon of the industries where known exposures to crystalline silica have occurred or there are known cases of silicosis.

OSHA will identify these establishments. select sites for inspection randomly, he number of inspections will be determined by the regional directors, and site with effective control programs can be inspected and exited after the program has been reviewed.

Examples of potential sources for targeting

worker’s compensation data	hospital discharge data
OSHA 200	OSHA data on industries that have history of exposure
state surveillance data	Dodge Reports

SAFETY MEETING

SUBJECT _____

DATE _____

Print Name

Sign Name

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Ingle-Barr Inc. Safety

Print Name

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Ingle-Barr Inc. Safety

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WOOD DUST LABEL

**WOOD DUST
FLAMMABLE**

**SAWING, SANDING OR MACHINING WOOD PRODUCTS
CAN PRODUCE WOOD DUST WHICH CAN CAUSE AN
EXPLOSIVE DUST CLOUD.**

**PROLONGED SKIN CONTACT MAY CAUSE
ALLERGIC RESPONSE.**

**PROLONGED INHALATION MAY CAUSE
RESPIRATORY IRRITATION.**

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Where the location of underground electric power lines is unknown, employees using jackhammers or hand tools that may contact a line must be provided with insulated protective gloves. Before work is begun it must be determined by inquiry (call OUPS), observation, or the use of instrumentation where the underground utility is located. The employee needs to know the location of such utilities, the hazards involved, and the means of protection needed.

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GROUND-FAULT PROTECTION ON CONSTRUCTION SITES

INSULATION AND GROUNDING

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor. Grounding may be achieved through the use of a direct connection to a known ground such as a metal cold water pipe.

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Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

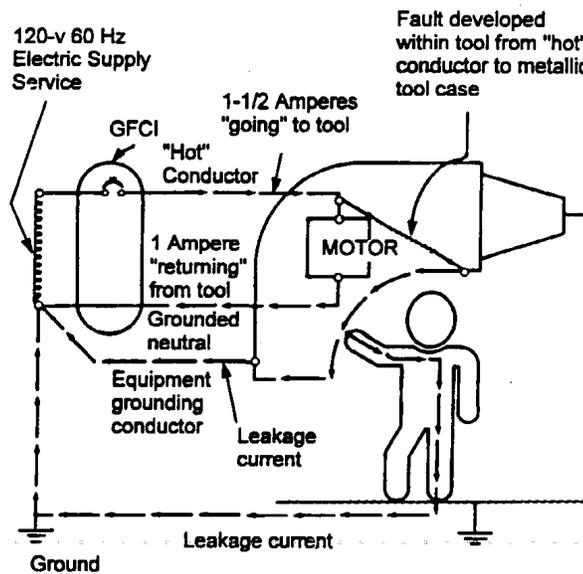
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GFCI monitors the difference in current flowing into the "hot" and out to the grounded neutral conductors. The difference (1/2 ampere in this case) will flow back through any available path, such as the equipment grounding conductor, and through a person holding the tool, if the person is in contact with a grounded object.

Ingle-Barr Inc. Lockout/Tagout

Contractor

Dear _____

Enclosed is a copy of the Ingle-Barr Inc.'s Lockout/Tagout Policy. As you have been engaged to perform services at our jobsite(s), we are making this available for you so that you are informed of our lockout/tagout policy. We expect you to make certain that all your employees and/or subcontractors have been informed of our lockout/tagout policy procedures.

Our providing this program to you does not change your status as an independent contractor. Further, IBI personnel will not be involved in the manner or method of performing your work nor in the instructing or training of your employees. Rather, this is being made available to you for informational purposes so that you and your personnel are aware of our procedures. It is not intended to be a supplement or a substitute for your procedures. Your signing of the duplicate of this letter will acknowledge your receipt of this policy and your understanding of your obligations

Please return this page with your signature to:

David S. Overly
P.O.Box 874
Chillicothe, Oh. 45601

Signature of Contractor Representative

Date

INGLE-BARR INC.

SAFETY POLICY STATEMENT

Ingle-Barr Inc. is committed to providing the safest possible working environment and conditions for our employees. The safety of our employees is a prime concern to management. With this in mind the following commitment is being made to prevent unnecessary injuries to our employees.

Management is committed to reducing employee exposure to injury and illness.

Every effort will be made to keep each of our work sites as safe a place to work as possible.

All employees are to be trained in safe work practices and are to understand the importance placed on working safely each day.

Management is open to any suggestions which will help improve the safety of our employees.

Every effort will be made to correct unsafe working conditions that are brought to management's attention,

Employees observed working unsafely will be counseled and retrained as necessary.

Safety is simply good business. Good for our employees and good for the company.

The prevention of employee injuries is of the utmost importance and a key ingredient to the continued success and growth of **Ingle-Barr Inc.** We urge each of our employees to join with us in this most worthwhile goal.

**HIV TESTING
DECLINATION STATEMENT**
(post exposure)

I HAVE BEEN GIVEN THE OPPORTUNITY TO RECEIVE HIV SEROLOGICAL TESTING, AT NO CHARGE TO ME. HOWEVER, I DECLINE THIS TESTING AT THIS TIME. DUE TO MY EXPOSURE INCIDENT, I UNDERSTAND THAT ALTHOUGH I AM DECLINING THE TEST, I MAY BE AT RISK OF ACQUIRING THE HIV VIRUS, A SERIOUS DISEASE.

(Employee Signature)

(Date)

(Supervisor Signature)

(Date)

**HEPATITIS B VACCINE
DECLINATION STATEMENT**
(post exposure)

I HAVE BEEN GIVEN THE OPPORTUNITY TO BE VACCINATED WITH HEPATITIS B VACCINE, AT NO CHARGE TO ME. HOWEVER, I DECLINE THE HEPATITIS B VACCINATION AT THIS TIME. I UNDERSTAND THAT BY DECLINING THE VACCINE, I CONTINUE TO BE AT RISK OF ACQUIRING HEPATITIS B, A SERIOUS DISEASE. I UNDERSTAND THAT IN THE FUTURE, I CAN RECEIVE THE VACCINATION SERIES AT NO CHARGE TO ME.

(Employee Signature)

(Date)

(Supervisor Signature)

(Date)

29 CFR 1910.134 Respiratory Standard; Medical Evaluation Questionnaire

The following is the Medical Evaluation Questionnaire as it appears in the 29 CFR 1910.134 Appendix C.

Part A. Section 1. (Mandatory)

The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
 2. Your name: _____
 3. Your age (to nearest year): _____
 4. Sex (circle one): Male/Female
 5. Your height: _____ ft. _____ in.
 6. Your weight: _____ lbs.
 7. Your job title: _____
 8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
 9. The best time to phone you at this number: _____
 10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
 11. Check the type of respirator you will use (you can check more than one category):
 - a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
 - b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
 12. Have you worn a respirator (circle one): Yes/No
If "yes," what type(s): _____
-

Part A. Section 2. (Mandatory)

Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you **currently** smoke tobacco, or have you smoked tobacco in the last month:
Yes/No

2. Have you **ever had** any of the following conditions?

- Seizures (fits): Yes/No
- Diabetes (sugar disease): Yes/No
- Allergic reactions that interfere with your breathing: Yes/No
- Claustrophobia (fear of closed-in places): Yes/No
- Trouble smelling odors: Yes/No

3. Have you **ever had** any of the following pulmonary or lung problems?

- Asbestosis: Yes/No
- Asthma: Yes/No
- Chronic bronchitis: Yes/No
- Emphysema: Yes/No
- Pneumonia: Yes/No
- Tuberculosis: Yes/No
- Silicosis: Yes/No
- Pneumothorax (collapsed lung): Yes/No
- Lung cancer: Yes/No
- Broken ribs: Yes/No
- Any chest injuries or surgeries: Yes/No
- Any other lung problem that you've been told about: Yes/No

4. Do you **currently** have any of the following symptoms of pulmonary or lung illness?

- Shortness of breath: Yes/No
- Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
- Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
- Have to stop for breath when walking at your own pace on level ground: Yes/No
- Shortness of breath when washing or dressing yourself: Yes/No
- Shortness of breath that interferes with your job: Yes/No
- Coughing that produces phlegm (thick sputum): Yes/No
- Coughing that wakes you early in the morning: Yes/No
- Coughing that occurs mostly when you are lying down: Yes/No

- Coughing up blood in the last month: Yes/No
- Wheezing: Yes/No
- Wheezing that interferes with your job: Yes/No
- Chest pain when you breathe deeply: Yes/No
- Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you **ever had** any of the following cardiovascular or heart problems?

- Heart attack: Yes/No
- Stroke: Yes/No
- Angina: Yes/No
- Heart failure: Yes/No
- Swelling in your legs or feet (not caused by walking): Yes/No
- Heart arrhythmia (heart beating irregularly): Yes/No
- High blood pressure: Yes/No
- Any other heart problem that you've been told about: Yes/No

6. Have you **ever had** any of the following cardiovascular or heart symptoms?

- Frequent pain or tightness in your chest: Yes/No
- Pain or tightness in your chest during physical activity: Yes/No
- Pain or tightness in your chest that interferes with your job: Yes/No
- In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
- Heartburn or indigestion that is not related to eating: Yes/ No
- Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you **currently** take medication for any of the following problems?

- Breathing or lung problems: Yes/No
- Heart trouble: Yes/No
- Blood pressure: Yes/No
- Seizures (fits): Yes/No

8. If you've used a respirator, have you **ever had** any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

- Eye irritation: Yes/No
- Skin allergies or rashes: Yes/No
- Anxiety: Yes/No
- General weakness or fatigue: Yes/No
- Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a [full-facepiece respirator](#) or a [self-contained breathing apparatus \(SCBA\)](#). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you **ever lost** vision in either eye (temporarily or permanently): Yes/No

11. Do you **currently** have any of the following vision problems?

- Wear contact lenses: Yes/No
- Wear glasses: Yes/No
- Color blind: Yes/No
- Any other eye or vision problem: Yes/No

12. Have you **ever had** an injury to your ears, including a broken ear drum: Yes/No

13. Do you **currently** have any of the following hearing problems?

- Difficulty hearing: Yes/No
- Wear a hearing aid: Yes/No
- Any other hearing or ear problem: Yes/No

14. Have you **ever had** a back injury: Yes/No

15. Do you **currently** have any of the following musculoskeletal problems?

- Weakness in any of your arms, hands, legs, or feet: Yes/No
- Back pain: Yes/No
- Difficulty fully moving your arms and legs: Yes/No
- Pain or stiffness when you lean forward or backward at the waist: Yes/No
- Difficulty fully moving your head up or down: Yes/No
- Difficulty fully moving your head side to side: Yes/No
- Difficulty bending at your knees: Yes/No
- Difficulty squatting to the ground: Yes/No
- Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
- Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B

Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- Asbestos: Yes/No
- Silica (e.g., in sandblasting): Yes/No
- Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- Beryllium: Yes/No
- Aluminum: Yes/No
- Coal (for example, mining): Yes/No
- Iron: Yes/No Tin: Yes/No
- Dusty environments: Yes/No
- Any other hazardous exposures: Yes/No

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

- **HEPA Filters:** Yes/No
- **Canisters (for example, gas masks):** Yes/No
- **Cartridges:** Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

- **Escape only (no rescue):** Yes/No
- **Emergency rescue only:** Yes/No
- **Less than 5 hours **per week:**** Yes/No
- **Less than 2 hours **per day:**** Yes/No
- **2 to 4 hours per day:** Yes/No
- **Over 4 hours per day:** Yes/No

12. During the period you are using the respirator(s), is your work effort:

- **Light** (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

- **Moderate** (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface

about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

- **Heavy** (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment:

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per

shift: _____

Duration of exposure per

shift: _____

Name of the third toxic

substance: _____

Estimated maximum exposure level per

shift: _____

Duration of exposure per

shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):
